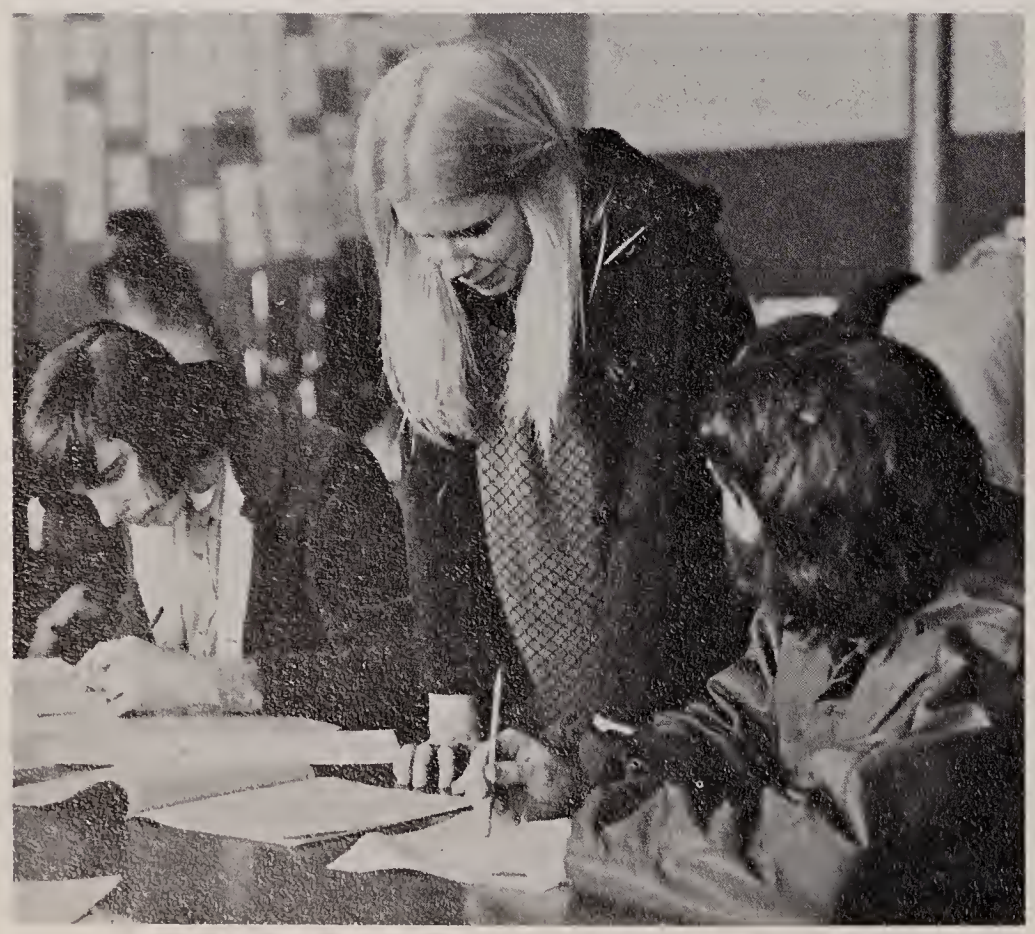
WORCESTER STATE COLLEGE

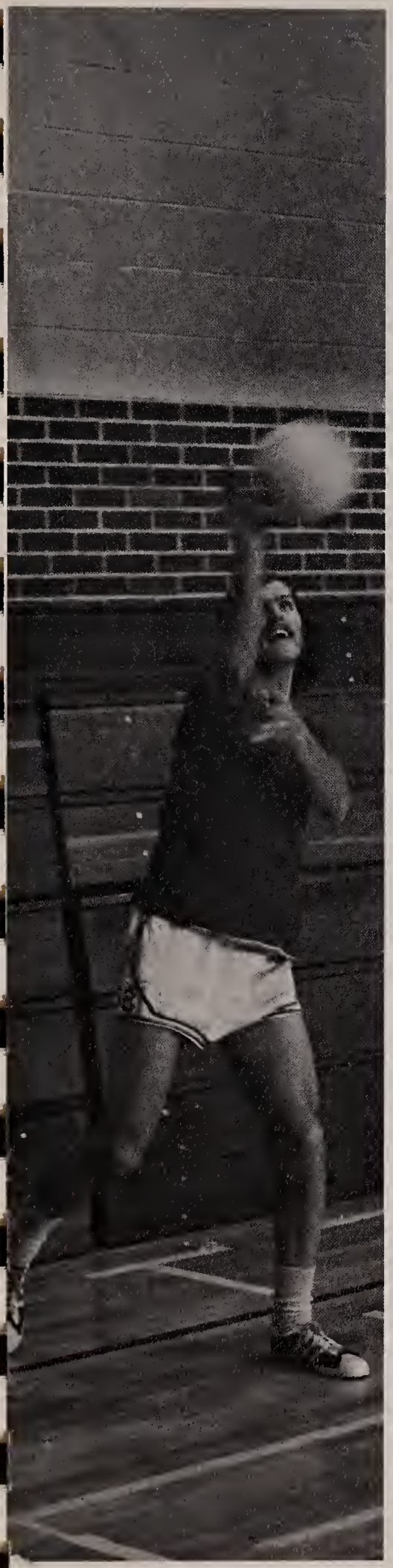
1972
1973

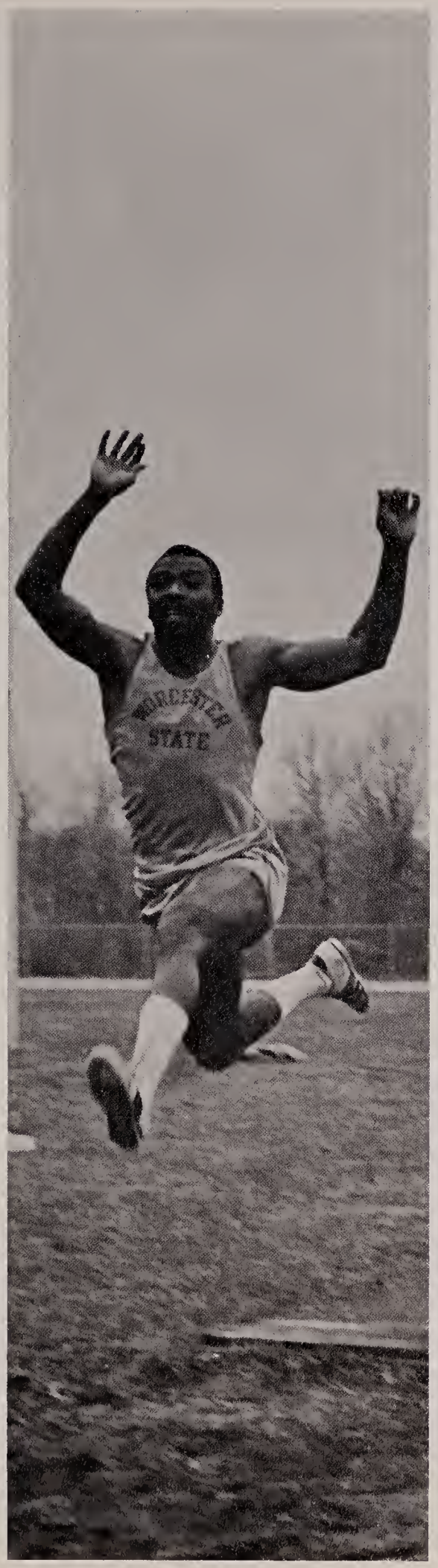
"I regard it as the foremost task of education to ensure the survival of these qualities: an enterprising curiosity, an undefeatable spirit, tenacity in pursuit, readiness for sensible self-denial, and above all, compassion."

Kurt Hahn

Biscayne



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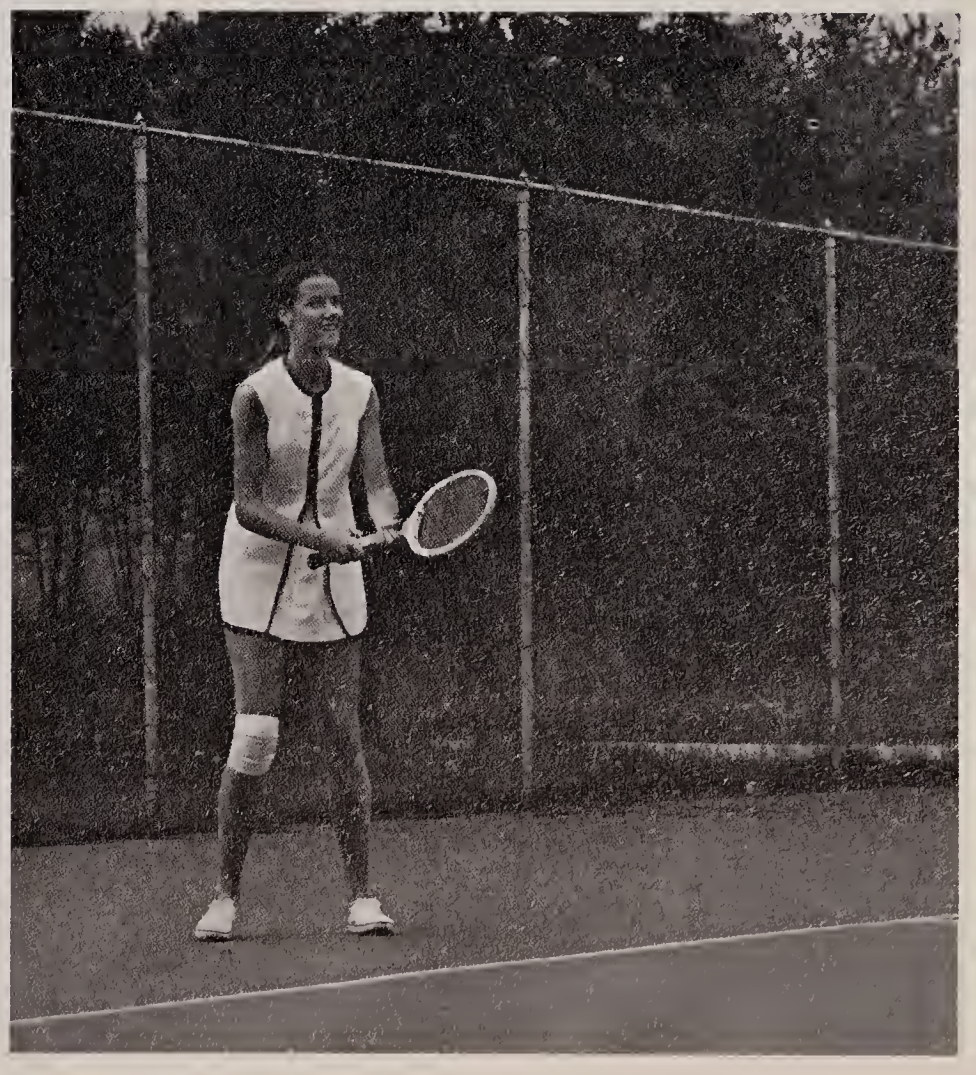

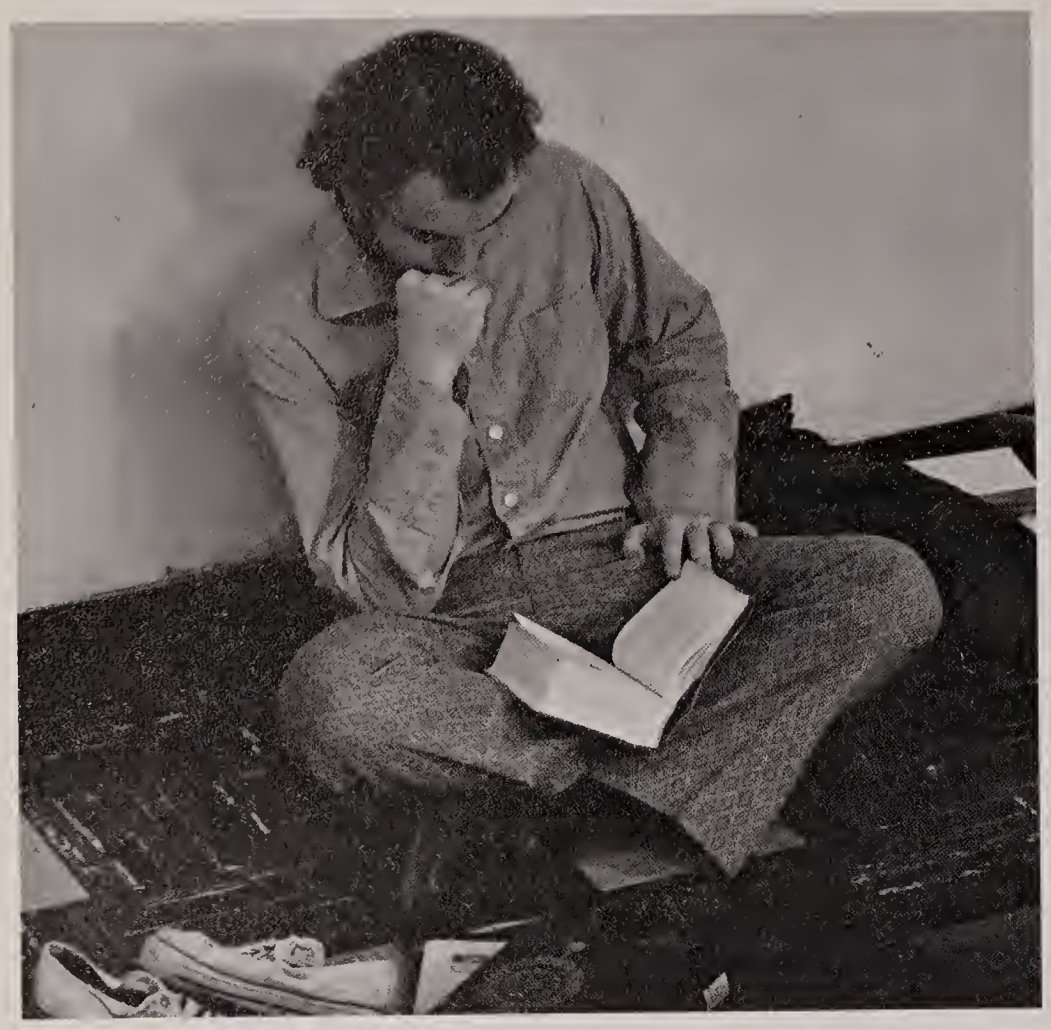

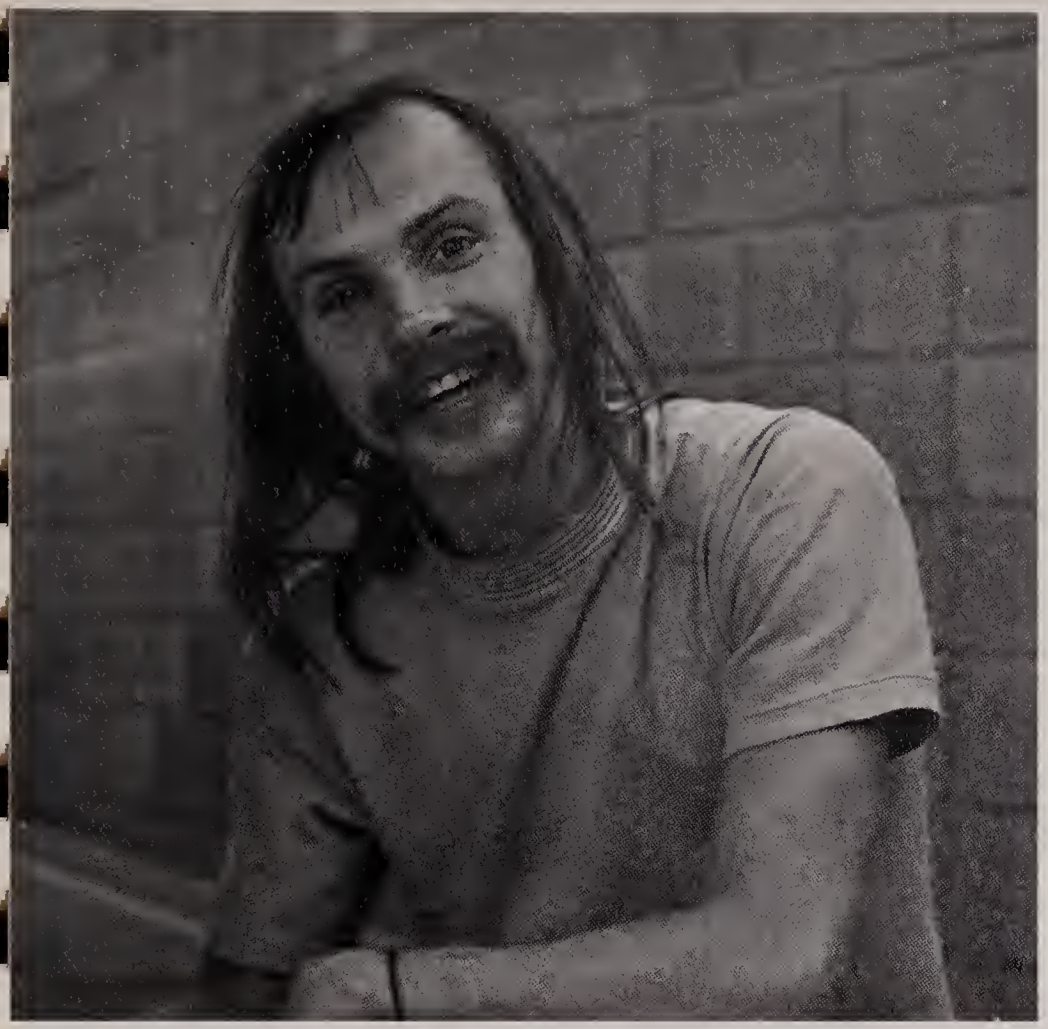

THE COMMONWEALTH OF MASSACHUSETTS

WORCESTER STATE COLLEGE

486 Chandler Street
Worcester, Mass.
01602

ACCREDITED BY:
National Council for Accreditation of Teacher Education
New England Association of Colleges and Secondary Schools

MEMBER OF:
American Association of Colleges for Teacher Education, American Association of University Women, American Council of Education, American Association of State Colleges and Universities, College Entrance Examination Board, College Placement Council, Eastern States Association for Teacher Education, Massachusetts Council of Teacher Education, New England Teacher Preparation Association, Worcester Consortium for Higher Education.

WSC OFFERS

Bachelor of Arts and Bachelor of Science Degrees

With Programs Leading To

MAJORS IN

BIOLOGY
CHEMISTRY
COMMUNICATION DISORDERS
ECONOMICS
ENGLISH
FRENCH
GEOGRAPHY
HISTORY
MATHEMATICS
NATURAL SCIENCE
PHYSICS
PSYCHOLOGY
SOCIOLOGY
SPANISH

MINORS IN

ART
BIOLOGY
CHEMISTRY
COMMUNICATION DISORDERS
DRAMATICS
ECONOMICS
ENGLISH
FRENCH
GEOGRAPHY
GERMAN
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HISTORY
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NATURAL SCIENCE
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Bachelor of Science in Education

OFFERING PROGRAMS IN

KINDERGARTEN-PRIMARY

and

INTERMEDIATE GRADES

WITH CONCENTRATIONS IN

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MUSIC
NATURAL SCIENCE
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SPECIAL PROGRAMS

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1010 Memorial Drive
Cambridge, Massachusetts 02138

EX-OFFICIO

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Board of Higher Education
182 Tremont Street
Boston, Massachusetts 02111

DR. LAWRENCE E. DENNIS, *Provost*
Massachusetts State College System
65 Franklin Street
Boston, Massachusetts 02110

GENERAL INFORMATION

ADMISSIONS PLACEMENT EXPENSES FINANCIAL AID
THE CONSORTIUM HOUSING HEALTH and COUNSELING SERVICES
STUDENT ACTIVITIES ACADEMIC POLICIES

Admissions

Freshman Requirements

Graduation from an accredited high school or equivalent preparation. The applicant's program of studies will be evaluated and selection for admission will be based upon the quality of courses taken. A college preparatory curriculum is highly recommended.

Completion of the College Entrance Examination Board Scholastic Aptitude Test (SAT). Achievement tests are not required for admission, but some departments may request achievement scores for placement purposes.

Completion of the application procedure and payment of required fees.

Transfer Requirements

At least one semester of successful accomplishment at an accredited college. Selection will be based upon quality and quantity of courses taken.

An official transcript of applicant's college grades.

Completion of application procedure and payment of required fees.

Note to College Graduates: *An individual who holds a baccalaureate degree from an accredited institution shall not be eligible to register for baccalaureate courses for credit in the undergraduate program. Such person may enroll in graduate level courses in WSC's Continuing Education Program providing that conditions of the college graduate admissions policy have been met.*

Specific questions pertaining to admissions procedures may be answered by your high school guidance counselor or by contacting the Director of Admissions, Worcester State College, 486 Chandler Street, Worcester, Massachusetts 01602, or by telephone at Area Code 617, 756-5121.

Placement

Credit By Examination

Worcester State College offers three methods which the student may use to obtain college credit by examination. A student who shows an acceptable level of proficiency in a specific area will be granted credit in that subject area. He then may elect to pursue more advanced courses in this area. If he so desires, he may use his credit obtained by examination to reduce the time spent in satisfying his degree requirements. Credit by examination may be obtained by any of the following methods:

The College Level Examination Program (CLEP) is open to both incoming and enrolled students. Any student who feels that he is highly competent in a specific subject area may register for a Subject Exam in the CLEP series for further academic credit. Information on CLEP may be obtained from the College Counseling Center.

The Advanced Placement Program (College Entrance Examination Board) is open to students who have participated in Advanced Placement Examination. Scores which are acceptable for credit will be determined by individual departments. Students wishing to apply for credit under this program are urged to contact the Director of Academic Advising.

Challenge Examinations is an internal testing program whereby a student who feels he is capable in a specific area may elect to "challenge the course." This is done by contacting the Department Chairman involved and requesting that the department issue such an examination. If the student achieves satisfactory scores, the Department will award credit. The department is responsible to develop its own examination and ultimately evaluate and report scores to the individual students. Presently, the following departments at WSC offer Challenge Examinations: Biology, Foreign Languages, Geography, Mathematics, Music, Physics.

Credit By Transfer

Admission of transfer students to Worcester State College follows the guidelines established by the Massachusetts State College System. Such guidelines include the following:

1. Evaluation for admission on the basis of previous college academic record;

2. Credits of a C or better earned in equal comparable courses at institutions of public higher education in the Commonwealth will be accepted. (Maintenance of a C average does not insure transfer to a State College);

3. Whenever possible, degree credit will be granted for course work completed at Massachusetts institutions of public higher education. Courses which do not fit the degree program may be counted as fulfilling the open elective requirements of the four-year curriculum. The transfer student will be required to fulfill the same degree requirements as any other student;

4. Honors courses, programs of independent study or Advanced Placement and College Level Examination Program (CLEP) advanced standing credit earned at another Massachusetts institution of public higher education will be accepted;

5. Whenever feasible, the college will not institute highly specialized courses needed for the degree program prior to the junior year;

6. A student must successfully complete one year as a full-time student to receive a baccalaureate degree from the college. (Maritime Academy and the College of Art excepted);

7. The number of transfers accepted by the college will be determined by existing vacancies in the various degree programs and the number of applicants determined eligible under the above guidelines. Among equally qualified and eligible transfer applicants, priority in admissions will be as follows:

a) first priority is given to transfer students in good standing from within the State College System;

b) second priority is given to qualified transfer applicants from Community Colleges.

Expenses

The following summary indicates as nearly as possible the regular expenses for which each student must plan in an annual budget. Tuition and fees are subject to change by vote of the Board of Trustees. Complete information on tuition and fees is available in the Worcester State College business office. Payment of tuition and all fees is necessary before registration is considered complete.

Tuition

Residents of Massachusetts — $250.00 a year; $125.00 to be paid at the opening of the college year in September and $125.00 at the opening of the second semester.

Non-Residents of Massachusetts — $600.00 a year; $300.00 to be paid at the opening of the college year in September and $300.00 at the opening of the second semester.

Fee For All Students

Each application for admission must be accompanied by a fee of $10.00. Following notification of acceptance of admission, a registration fee of $50.00 must be paid within thirty days. This fee will be deducted from the tuition of students who attend, and will be forfeited by those students who do not attend.

Refunds for students leaving the college within six weeks after the beginning of the semester will be based on the regularly established schedule of refunds, minus the registration fee.

Additional Expenditures

- Athletic Fee of $25.00 per academic year
- Student Activity Fee of $40.00
- Library Fee of $10.00 per semester
- Graduation Fee of $5.00, to be paid in year of graduation
- Laboratory Fee for all entering students of$20.00. Additional fees may be charged for certain specialized courses.
- Expense of necessary textbooks and supplies is expected to cost approximately $150.00 per year.

Financial Aid

Programs Administered By The College

Information and application for the following programs should be addressed to the Associate Dean of Students. Each applicant must submit either a *Student's Confidential Statement* or a *Parent's Confidential Statement* before awards can be assigned.

FEDERAL PROGRAMS

National Defense Student Loan Program – College students who are in need of financial assistance in order to continue or to commence their college education may borrow through this loan program. The law requires that loans shall be made only to a student who (a) is a national of the United States or is in the United States for other than a temporary purpose and intends to become a resident there of; (b) is in need of the amount of the loan to pursue a course of study on at least a half-time basis as an undergraduate student at the institution; (c) is capable, in the opinion of the institution, of maintaining good standing in such course of study; and (d) is enrolled on at least a half-time basis and must maintain acceptable standing at the same institution.

College Work Study Program – This section of the Higher Education Act 1965 (transferred from the Economic Opportunity Act of 1964) allows the college to provide on or off-campus work opportunities for those in need of financial aid in order to attend college. Students may be allowed to work up to 15 hours per week during a normal school week, and up to 40 hours per week during vacations. The work usually involves experiences as helpers in secretarial, laboratory, library, and maintenance positions on campus. Special arrangements may be made whereby students can be employed in off-campus jobs with public or private non-profit agencies such as Community Action Council.

Educational Opportunity Grants – Under the financial aid program of the Educational Opportunity Grants, a student who otherwise could not continue his education and who maintains acceptable academic standing can receive a grant, provided that the amount received is not in excess of 50% of the total financial aid received by the student. These grants may be continued throughout the four academic years. Receipt of this grant is usually restricted to the disadvantaged.

SCHOLARSHIPS

Students are selected for scholarships on the basis of academic standing and financial need. The number of scholarships awarded is determined each year by the Scholarship Committee. All applications for scholarships should be made by April 1 to the Associate Dean of Students.

SCHOLARSHIPS FOR INCOMING FRESHMEN AND UPPERCLASSMEN

The Edward Agbay Memorial
The William B. Aspinwall
The Tryphosa Bates-Batcheller
The M. Harriette Bishop
The Nancy Burncoat
The Walter P. Busam
The Vera M. Dowden
The Esther Forbes
The Elizabeth V. Foster
The Gold Star (Daughter or Son of Veteran Only)
The Kappa Delta Pi
The Olive Higgins Prouty
The Carleton E. Saunders, Sr., Memorial
The Eugene A. Sullivan
The Chester S. Warner
The Worcester State College Women's Club

For Upperclass Woman Student:
The Esther C. Averill
For Black Students:
The Sarah Ella Wilson

Other Sources of Financial Aid

For any of the following aid programs, students should apply directly to the appropriate agency. For assistance, or further information, contact the Associate Dean of Students.

Massachusetts Board of Higher Education Scholarships

Residents of Massachusetts may apply to the Board of Educational Assistance, 200 Newbury Street, Boston, Ma. 02116, for scholarship aid. Based upon academic standing and financial need, the grants are renewable for four years.

Higher Education Loan Plan

Students presently enrolled at the state college or freshmen who have received their letter of acceptance, may apply to banking institutions for loans to aid them in the payment of their college expenses. Inquiries should be made to local banks or to the Office of the Executive Director, Massachusetts Higher Education Assistance Corporation, 604 Statler Building, Boston, Ma., 02116.

Veterans' Benefits

The college is fully accredited with the Veterans Administration and operates under a contract whereby veterans or their children may obtain the full benefit of educational assistance when eligible. Veterans counseling is available at all times in the offices of the Associate Dean of Students.

Social Security Benefits

F.I.C.A. educational benefits are available to survivors of contributing members. Apply at any local social security office.

Student Employment

The Director of Placement maintains a file of part-time positions which are available to students. It is recommended that no one exceed twenty hours of employment while carrying a full program of studies.

The Consortium

The Worcester Consortium for Higher Education, Inc. is an association of local colleges, universities and other educational institutions. Admission to Worcester State College enables a student to study and participate in activities in a variety of academic surroundings. Cross-registration privileges permit individuals to elect courses offered at any of the other institutions on a limited and space available basis. Á listing of current offerings, scheduled periods and calendars, as well as a complete list of regulations is available in the Registrar's office.

Member Institutions

Anna Maria College
Assumption College
Becker Junior College
Clark University
College of the Holy Cross
Leicester Junior College
Quinsigamond Community College
Worcester Junior College
Worcester Polytechnic Institute
Worcester State College
University of Massachusetts
Medical School

Associate Institutions

American Antiquarian Society
Craft Center
International Center
Old Sturbridge Village
Worcester Art Museum
Worcester Foundation for
Experimental Biology
Worcester Historical Society
Worcester Horticultural Society

Housing

Campus housing will be available to a limited number of students sometime during the fall term of 1972. Such housing will be located in an attractive, garden-type housing complex now under construction. The entire complex, which will ultimately house 500 students, is expected to be completed by the fall term of 1973. Unfortunately, residence fees for the housing complex were not determined at the time of this printing. For any information concerning housing, please contact the Office of the Dean of Students. The college also recommends homes in Worcester where room and board may be obtained at reasonable rates. The Dean of Students Office can also supply a listing of available apartments.

Health and Counseling Services

First Aid

The college nurse is available for first aid services in the Gym Building dispensary during school hours. She is also responsible for maintaining medical records on all students.

The Counseling Center

The primary function of the Center is to provide counseling and testing to WSC students concerning matters of educational or vocational choice, educational planning and personal-social development. The serv-

ices of the Counseling Center can be broadly grouped into two categories: (1) Counseling and (2) educational psychological testing. Faculty members are invited to make use of the Center's services in assisting their students to achieve their maximum potential.

Student Activities

There are opportunities for students to take an active part in extra-class activities while in college. Most of the organizations are open to all students. It is the intent of the college to have a sufficient variety of activities which are suited to the needs and interests of the students. Many of the club periods are scheduled during the school day and meetings are held frequently.

It is hoped that each student will examine the program and purposes of the various clubs and organizations, then decide on those to which he may make the greatest contribution and from which he will derive the most benefit. For a complete listing of campus organizations, please consult the *WSC Student Handbook.*

Class Organization

The first organization to which every student belongs when he enters college is his class. Officers are chosen and a program of activities is inaugurated. Although many of these are of a social nature, there are numerous opportunities for the student to participate and to gain experience in working with the administration, faculty, and fellow classmates.

Student Senate

The Student Senate is one of the most important organizations on campus, because of its liaison position between the administration and the student body. It is considered an honor to be elected to serve on this council. Qualifications for elections are to be found in the *Student Handbook.*

Athletics

The athletic activities are promoted and organized by the Athletic Recreational Association. Intra-mural games and other recreational activities are sponsored.

Competitive Athletics programs on the intercollegiate level provide a unifying and entertaining force for the student body, faculty and friends of Worcester State.

As members of the National Collegiate Athletic Association (N.C.A.A.), the Eastern Collegiate Athletic Conference (E.C.A.C.), the New England College Athletic Conference (N.E.C.A.C.), the National Association for Intercollegiate Athletics (N.A.I.A.), and the Massachusetts State College Athletic Conference (M.S.C.A.C.), our men's athletic teams compete in eight varsity sports: Soccer, Cross Country, Basketball, Baseball, Hockey, Golf, Tennis, and Track. Increasingly important are the club-sponsored teams of Football and Crew.

A comprehensive athletic program is also provided for women, with intercollegiate competition in Field Hockey, Basketball, Volleyball, Tennis and Softball. Varsity competition is regulated and promoted by our membership in the following associations: The Massachusetts, Eastern, and National conferences of the Association of Intercollegiate Athletics for Women (A.I.A.W.), and the Massachusetts State College Athletic Conference for Women (M.S.C.A.C.W.).

Fine Arts

Under the sponsorship of the Fine Arts Council, the student body sponsors a series of programs during the year of internationally known musicians, dancers, and dramatists. These programs are open to the public. Admission to all performances is free.

Music

Students are urged to participate actively in the vocal and instrumental groups on campus. Academic credit is given to all music organizations. See Department of Music section of this catalog.

Educational Associations

There are two educational organizations at the college which offer professional association for the prospective teacher. The organizations provide programs of social and educational interest with students participating at the local, state, and national levels.

The Association for Childhood Education is open to all students who are interested in the problems of good education for young children.

The Student National Education Association is affiliated with the National Education Association. As one of the largest organizations on campus it provides opportunities for the prospective teacher to participate in educational programs.

Honor Society

Membership in Gamma Chi Chapter of Kappa Delta Pi, the national honor society in education, is restricted to qualified students from the Junior and Senior classes who meet the high academic requirements.

Black Student Union

This organization fosters self-government among its members and promotes student and community activities for the best interest of the minorities of W.S.C. and the surrounding community.

Student Newspaper

There are many opportunities for self-expression and literary involvement on campus. *The New Student Voice* is the medium through which the college community may express itself. The newspaper encourages student participation in reporting news events while also placing an emphasis on creative expression.

Literary Magazine

Original prose and poetry are published, and widely distributed in the semi-annual literary magazine *The Thirteenth Meaning.* This effort is the result of critical analysis by Literary Club members. In addition, the club fosters interest in the entire field of literature through lectures, attendance at plays, discussion, and visits to places of literary significance.

Drama

In addition to the courses and activities offered in this area by the Speech and Dramatics Department, the *Sock and Buskin* club produces two major productions per year. Past performances have received excellent reviews.

Sock and Buskin Incorporated also sponsors Worcester's first **Storefront** Theater at 420-422 Pleasant Street. Its purpose is to bring the college and the community together in a way that can be of mutual benefit in the appreciation and development of the theater arts. The **Storefront**, established as a laboratory theater, encourages the use of neighborhood talent for productions performed before a small intimate audience of 30 people in order to develop theater aesthetics and techniques derived from Antonin Artaud, Jerry Grotowski, and Bertolt Brecht.

The *Robert F. Kennedy Memorial Debating Society* holds frequent inter-collegiate debates which provide

experience in research and presentation techniques on the contemporary problem chosen as the Collegiate Debate Question of the year.

Subject Matter Clubs

There are numerous clubs on campus which provide stimulation and experiences for the students who are interested in a particular field or major area. Lectures, film strips, demonstrations, and discussion provide inspiration and encouragement to the student who participates actively in these organizations. Some of these clubs are the Audio-Visual Aids Association, Cercle Francais, La Corte Castellana, International Relations Club, Science Club, and Modern History Club.

Academic Policies

Grading and Quality Point System

I. The marking system in effect at the college consists of the letter grades A, B, C, D, E, W, WP, WF, P, and F.

II. Each student's marks are evaluated each semester on a quality point basis. A is equivalent to 4.0, B to 3.0, C to 2.0, D to 1.0, and E to 0.0. W, WP, WF, P, and F are not included in the computation of the quality point average.

The number of quality points a student receives in a course is determined by multiplying the total number of semester hours by the corresponding number of quality points. For example, the student receives an "A" in English which is a 3 credit course, therefore 4 x 3 = 12 quality points.

Grades are never removed from a student's permanent file. Courses that the student has failed may be re-taken, but both marks will be included in the quality point average calculation.

III. Freshman with a quality point average of less than 1.0 at the end of their first semester will be dropped from the college rolls.

To proceed from Freshman to Sophomore year, the student must achieve a quality point average of

1.50. To proceed from the Sophomore year to the Junior year, the student must have a quality point average of 1.75 for his Sophomore year or a 1.75 cumulative average. To proceed from the Junior to Senior year, the student must have a quality point average of 2.0 for his Junior year or a cululative average of 2.0.

A cumulative point average of 2.0 for four years is required for graduation.

IV. Students wishing to take courses outside the College's regular under-graduate program must receive the prior written approval of the Director of Academic Advising.

V. Incomplete (INC):

An incomplete grade is an extension of time granted by the individual faculty member to a student to complete the requirements of a course in which he has already completed 80% of the work, but has been unable to finish the course requirements because of valid reasons.

Plans for the removal of the incomplete should be clearly understood. All incompletes must be resolved within eight weeks after the beginning of the next semester. After this time, the incomplete will automatically become a grade of E, and is so recorded on the student's permanent record.

Pass/Fail Policy

I. A pass-fail system has been established for a period of two (2) years wherein all full-time students will be able to select two courses and physical education per semester on a pass-fail basis.

1. Pass-fail grading shall not apply to those courses used to acquire the thirty (30) hours in the student's major field.

2. Pass-fail grading shall not apply to those courses used to acquire the eighteen (18) hours in the student's minor field.

3. These courses must be outside the elementary education major's field of concentration until he has acquired fifteen (15) hours in this area.

II. The student's mark shall be a "P" or "F" and shall not affect his Quality Point Average, though it shall be entered on his transcript.

III. The student shall receive an appropriate number of credit hours if he passes.

IV. Students must inform the Registrar within three weeks of the first day of classes if they wish to take

a course Pass-fail. The instructor shall grade the student A, B, C, D, or E and the Registrar will convert the letter grade to a "P" or "F". If a student decides to change his choice of the Pass-fail course then he must notify the Registrar within three weeks from the first day of classes.

V. This policy shall become effective as of the spring semester of the 1970-71 academic year.

VI. Evaluation and recommendations relative to the pass-fail grading system shall take place in the second year in sufficient time to accomodate the needs in the subsequent period. This should be the responsibility of the Student Affairs Committee and should be initiated by the chairman of the College Council.

Withdrawal Policy

I. All withdrawals shall originate with the Dean of Student's Office.

II. Withdrawal from School:

1. Permanent, no intention to return. Individual will file with the Dean of Student's office. To return, the individual would have to file for admittance as a new student. Use of W, WP, WF, but no computation in Quality Point Averages will be recorded on the Student's permanent record.

2. Leave of Absence:

Temporary – student to return on a certain date. To preserve his position in the school, the student must return on this date. An extension of no more than one (1) semester may be granted. Failure to return on the agreed-upon date will necessitate filing for admission as a new student if the student desires to return. Use of W, WP, WF, but no computation in Quality Point Averages will be recorded on the student's permanent record.

3. Extenuating Circumstances:

The student, at the discretion of the Dean of Students, may be granted a temporary leave of absence. The Instructor will be informed not to submit grades for this student for the semester and to delete the student's name from the class list.

4. Student advisors shall be informed and consulted in each case, whenever possible.

III. Withdrawal from Individual Courses:

1. Students shall be permitted to change courses up to three (3) weeks after the first day of classes. Students shall require the permission of the Instructor of the course they are entering, if the

section is full, and must have discussed the change with his Advisor, and received Advisor's permission. Registrar's Office will furnish the Dean of Students' Office with the required forms.

2. Students may withdraw from individual courses prior to four (4) weeks before the date of the last class. Students withdrawing from a course before the eight (8) week "D - Warnings" are issued, shall receive a "W" on their record. Students withdrawing from a course after "D-Warnings" are issued, shall receive a W, WP, or WF on their record. Students shall receive no credit for courses from which they have withdrawn and in no case shall a W, WP, WF, be used in computing a student's Quality Point Average.

3. Students may be granted a "Withdrawal, due to Extenutaing Circumstances" at any time, by the Dean of Students.

4. Students withdrawing from all of their scheduled courses, shall be considered as having withdrawn from the college, and must go through the withdrawal from school procedure outlined above in Section 2.

5. Student advisors shall be informed and consulted in each case.

IV. Students who fail to go through established procedures will be considered as still enrolled in their courses and shall receive a grade based upon the course requirements.

Academic Programs Leading To Degrees In

BACHELOR OF ARTS

BACHELOR OF SCIENCE

GENERAL REQUIREMENTS CURRICULAR REQUIREMENTS

BACCALAUREATE DEGREE ELECTION – B.A./B.S.

Bachelor of Arts
Bachelor of Science

General Requirements

CREDIT HOURS

Every candidate for the Bachelor of Arts or Bachelor of Science degree must complete 128 semester hours of credit before graduation.

RESIDENCE

The usual period of residence and study required of a student who enters as a Freshman is four years. Transfers must be in residence and must successfully complete one year at Worcester State College as a full-time student (minimum of 24 credit hours) in order to graduate from Worcester State College. Transfer credit within the major must be approved by the major department. The major department will determine course and credit requirements, and students must meet the degree requirements of the class with which they plan to graduate. Transfer credit courses from accredited institutions must have been completed within the previous ten years (exception to this rule can only be made after individual departmental evaluation).

GRADUATION GRADE

A grade point average of 2.0 or better must be attained in courses in the major field, and an average of 2.0 must be attained for all courses to qualify for graduation.

COURSE LOAD

(1) **Minimum.** A full time student is required to register for courses totaling a minimum of 12 hours per semester.

(2) **Maximum.** A student may elect up to 18 semester hours without special permission. Official permission is required from the Associate Academic Dean (Liberal Arts), through the student's advisor, to

FOR BACHELOR OF SCIENCE IN EDUCATION REQUIREMENTS, SEE PAGE 65

elect more than 18 semester hours per semester.

Curricular Requirements

The particular courses in which credits may be earned are selected by the student and his advisor to meet the student's needs within a general framework designed to insure a certain degree of breadth and depth in his intellectual development. The student will have the counsel of his faculty adviser during and after the preregistration period and throughout his college career. The required course of study combines General Foundation, Distribution, Major-Minor program, and Elective Courses.

GENERAL FOUNDATION The following courses are to be taken by all students beginning in the Freshman year and continuing until the requirements are completed (Section 3 excepted):

(1) ENGLISH COMPOSITION Required of all Freshman unless exemption is granted by the Department of English.

(2) PHYSICAL EDUCATION Each student is required to select and complete two semester hours in accredited courses offered by the Health and Physical Education Department.

(3) FEDERAL AND STATE CONSTITUTIONS Prior to graduation each student shall have completed a course in which the United States and Commonwealth of Massachusetts constitutions are studied (Chapter 73, Section 2A-General Laws, Commonwealth of Massachusetts as amended). *See Po 100 course description.*

DISTRIBUTION The purpose of the requirements in distribution is to provide the student with a general knowledge of the content and methods of the various fields included in a liberal education. Students may elect courses to meet these requirements in any year of the undergraduate program. The requirements must be fulfilled by a minimum of six credit hours in each of the four groups listed below. Courses taken to meet General Foundation requirements do not apply. Courses included in the student's major or minor, however, may be used to meet distribution requirements in the groups to which they apply.

Group I. Humanities

- Literature (read either in English or other languages)
- Philosophy
- History
- Foreign Languages
- Media

Group II. Social Sciences

- Economics
- Education
- Geography
- Political Science
- Psychology
- Sociology

Group III. Arts

Art
Drama
Music

Group IV. Natural Sciences and Mathematics

Astronomy
Biology
Chemistry
Geology
Mathematics
Physics
Physical Science
Physical Geography

MAJOR-MINOR PROGRAM The object of this concentration requirement is to provide the student with a project of integrated study, leading him to the satisfaction of having made progress in a well-developed field of learning. The student is given the opportunity to study one subject, the major, and a second subject, the minor, in an increasingly effective and scholarly way.

The student chooses his major field of intellectual interest in one of the academic disciplines offered. The chairman of that department will assign a faculty member to assist and advise the student in designing a comprehensive program of studies.

The program must include:

(1) At least 30 credit hours in the major field. The major may not exceed 48 hours in a single department except by permission of that department. The major shall be outlined and certified by the major department.

(2) A minimum of 18 credit hours in a minor subject area, approved by the major advisor. The minor may not exceed 24 credit hours except by official permission.

ELECTIVE COURSES Other courses to complete the 128 hours for graduation may be selected without restriction. The student, however, should be guided in his choice by the purpose of promoting breadth as well as depth in his intellectual development. The purpose of elective courses is to permit the further pursuit of advanced work and to encourage exploration in diverse fields of knowledge.

Baccalaureate Degree Election - B.A./B.S.

Students may receive either a Bachelor of Arts or Bachelor of Science while majoring in any subject, with the exception of Elementary Education (See requirements under Bachelor of Science in Education degree).

Each department will specify the requirements in its major and ancillary fields. Departments are free to structure requirements to meet either or both degree programs provided such requirements are consistant with college-wide requirements for graduation.

DETERMINATION OF DEGREE:

There are two areas of concentration: Humanities and Sciences. These areas are composed of subject areas normally associated with such designation:

HUMANITIES	SCIENCES	
Art	Biology	Physical Education
Drama	Chemistry	Political Science
English	Economics	Psychology
Foreign Languages	Education	Sociology
History	Geography	Communication Disorders
Media	Mathematics	
Music	Natural Science	

Designation of degree shall be made by totaling elective credits* in the Humanities and Sciences concentrations. If a majority of elective credits were awarded in the Humanities the student will be awarded a Bachelor of Arts Degree; if a majority of the elective credits were awarded in the Sciences the student will be awarded a Bachelor of Science Degree.

The curriculum requirements and degree designation became effective June, 1972, and shall accommodate all students presently enrolled.

The student entered under previous degree structures who feels unjustly treated by a change in degree title may apply to the Academic Dean for a variance.

**ELECTIVE CREDITS* are defined as any credits above those required for completion of major (major and ancillary courses), and as listed under General Foundations.

ACADEMIC DEPARTMENTS

ART BIOLOGY CHEMISTRY ECONOMICS and SOCIOLOGY ENGLISH
FOREIGN LANGUAGES GEOGRAPHY and GEOLOGY
HEALTH and PHYSICAL EDUCATION HISTORY and POLITICAL SCIENCE
MATHEMATICS MEDIA MUSIC PHYSICS
PSYCHOLOGY and PHILOSOPHY SECONDARY EDUCATION
SPEECH and DRAMATICS

DEPARTMENT OF

ART

Doris M. Carter, Chairman
Jacqueline G. Casale
Mary T. Dolphin
Sandra Kocher
Ellen V. Kosmer
Michel Merle

The Art Department offers diversified courses thereby achieving a more comprehensive type of art education suiting many needs. One direction tends toward theoretical studies, i.e. art of the past, present and future involving various art history courses, visual conservation, etc. Another direction is towards personal involvement with actual forms, as in the creative painting courses, graphics and design courses. A third direction is in art education where the techniques needed to foster creative expression in both children and adults are stressed.

These various directions endeavor to help the individual to see and appreciate the world around him, and more creatively to express himself in his environment.

A major in Art is not available at the present time. A student, however, may elect a program of courses leading to a minor in Art.

DEPARTMENT OF

BIOLOGY

Thomas L. Roberts, Chairman
Edwin A. Boger
Carol Chauvin
John F. Eager
Terry E. Graham
Charles M. Habib
Paul A. Holle
Marlin B. Kreider
William K. Masterson
Sarindar M. Paracer
Bruce D. Russell
Anthony W. Thurston

A knowledge of fundamental principles of biology is essential to man's self-understanding and to making reality more intelligible. It should further the rational evaluation of some of man's major problems.

Courses in the Department of Biology are directed towards cultivating the scientific methods of inquiry. Students fulfilling the major will have gained a deeper understanding of fundamental life processes, an appreciation of the history and diversity of life in the biosphere, a critical concern for the environment, and the role of biomolecular mechanisms in the maintenance of life.

The core curriculum in biology aims at preparing students for admission to graduate or professional schools, teaching at elementary and secondary levels, and positions in applied biology and ancillary fields. Departmental offerings are also designed to provide a background in the life sciences for the interested non-major.

BIOLOGY MAJOR REQUIREMENTS

A Biology major is required to complete the following: Contemporary or General Biology (6 credits), Invertebrate Zoology (3 credits), Botany (3 credits), Seminar (minimum of 2 credits), and a minimum of 16 semester hours of additional courses selected from the departmental offerings — chosen with the advice and consent of a faculty advisor.

Biology majors who wish to be recommended by the department for participation in student (practice) teaching, certification for secondary school teaching, and/or admission to graduate or professional schools, must also complete the following: Mathematics (Calculus, Algebra, Trigonometry, and/or Analytical Geometry - 6 credits), Chemistry (8-12 credits), and Biological or General Physics (6 credits).

Biology majors who wish to participate in student (practice) teaching shall have completed a minimum of 18 credit hours of biology courses, and a minimum of 12 credit hours in the ancillary (Natural Sciences and Mathematics) courses. A grade point average of 2.0 must have been obtained in both areas.

RECOMMENDED FRESHMAN PROGRAM FOR BIOLOGY MAJORS (B.A./B.S.)

FALL SEMESTER		SPRING SEMESTER	
Physical Education	½	Physical Education	½
English Composition	3	Elective	3
Foreign Language	3	Foreign Language	3
Mathematics	3	Mathematics	3
General Chemistry	4	General Chemistry	4
Contemporary Biology	3	Contemporary Biology	3
	16½		16½

DEPARTMENT OF

CHEMISTRY

Melvin Merken, Chairman
Alan D. Cooper
Arthur C. Ferguson
Ronald Harris
Estelle C. Zoll

It is the aim of the Department of Chemistry to provide programs to meet the needs and interests of students ranging from the student majoring in a non-technical area who is interested in learning something about Chemistry and the way in which it functions as an experimental science to the student who wishes to undertake a program of professional training in Chemistry to prepare him to go on to graduate school in Chemistry or to do chemical research in government or industry. The student majoring in a non-technical area who wants to learn something about Chemistry and the way in which it functions is advised to take Ch 105 or Ch 110 and Ch 111. The student majoring in a science such as Physics, or Biology who wishes to take a course in General Chemistry is advised to take Ch 120 and Ch 121.

The sequence of courses which makes up the major in Chemistry described below is designed for students who wish to prepare for careers in the teaching of Chemistry in secondary schools, or for careers in such areas as medicine, dentistry, pharmacy, oceanography, or chemical sales. It is intended to provide the student with the flexibility to undertake a wide variety of minors. The student intending to go on to graduate school in chemistry or directly into chemical research in government or industry is expected to take at least two 400 level courses in Chemistry.

CHEMISTRY MAJOR REQUIREMENTS

The requirements for a major in Chemistry are: General Chemistry I-II, Analytical Chemistry I-II, Organic Chemistry I-II, and Physical Chemistry I-II. These courses, totaling 36 semester hours, should be completed by the end of the Junior Year, enabling the student to elect one or more Chemistry courses in the Senior year drawn from Qualitative Organic Analysis, Bio-chemistry, Advanced Inorganic Chemistry, Foundations of Chemistry and Physics and Special Topics in Physical Chemistry, and Independent Study in Chemistry.

Chemistry majors are also expected to take mathematics through Calculus I-II; General Physics I-II; and two years of a foreign language, preferably German through Intermediate German I-II. Students with a strong mathematical background from high school are advised to select Calculus I-II in the freshman year; otherwise, College Algebra and Analytical Geometry are recommended. A course in Computer Science is strongly recommended.

RECOMMENDED FRESHMAN PROGRAM FOR CHEMISTRY MAJORS (B.A./B.S.)

FALL SEMESTER		SPRING SEMESTER	
English Composition	3	Elective	3-4
Foreign Language	3	Foreign Language	3
Physical Education	½	Physical Education	½
Distribution Requirements	3-4	Distribution Requirements	3-4
General Chemistry I	4	General Chemistry II	4
Mathematics	3	Mathematics	3
	16½-17½		16½-17½

DEPARTMENT OF

ECONOMICS and SOCIOLOGY

Robert W. Goss, Chairman
Francis L. Brooker
Kee Il Choi
George T. Kelley
Baheej Khleif
Frank C. Pizziferri
Norma Stanton
Stephen F. Trimby
Faith T. Zeadey

THE ECONOMICS PROGRAM

The Economics program has two basic purposes. First, it is designed to provide undergraduate training for those students who wish to pursue professional economics careers in government, industry, and academic institutions, or to obtain background for some other career such as law. Equally important, economics is offered as part of an interdisciplinary approach to social science education at the college whether in the form of a particular program like Urban Studies or as a general service area for students.

THE SOCIOLOGY PROGRAM

The sociology curriculum is designed to give all students a proper frame of reference for social participation and social evaluation. It is also explicitly intended to be a basic program for those persons who seek to make the field of sociology their life's work. In both cases it is an open-ended program designed to meet the needs of students in contemporary society.

REQUIREMENTS FOR A MAJOR IN ECONOMICS

A minimum of thirty semester hours credit in Economics is required, and must include the following courses: Principles of Economics I and II, Microeconomics, Macroeconomics, and Introduction to Mathematical Economics. Strongly recommended as one of the remaining elective courses should be one dealing with the quantitative aspects of the field. Specific areas of concentration for each major will be designed in cooperation with his faculty advisor.

RECOMMENDED FRESHMAN PROGRAM FOR ECONOMICS MAJORS (B.A./B.S.)

FALL SEMESTER		SPRING SEMESTER	
English Composition	3	Elective	3-4
Foreign Language	3	Foreign Language	3
Physical Education	½	Physical Education	½
Distribution Requirements	3-4	Distribution Requirements	3-4
Principles of Economics I	3	Principles of Economics II	3
Minor Elective	3	Minor Elective	3
	15½		15½

REQUIREMENTS FOR A MAJOR IN SOCIOLOGY

Thirty semester hours in sociology is required of all majors including the following courses: Introductory Sociology I and II, Social Science Research, and Seminar. If the student intends to pursue graduate education in the field of sociology, he should also plan to elect Social Theory as one of his courses. The remainder of his program is chosen with the advice and consent of his faculty advisor.

RECOMMENDED FRESHMAN PROGRAM FOR SOCIOLOGY MAJORS (B.A./B.S.)

FALL SEMESTER		SPRING SEMESTER	
English Composition	3	Elective	3-4
Foreign Language	3	Foreign Language	3
Physical Education	½	Physical Education	½
Distribution Requirements	3-4	Distribution Requirements	3-4
Introductory Sociology I	3	Introductory Sociology II	3
Minor Elective	3	Sociology Elective	3
	15½		15½

DEPARTMENT OF

ENGLISH

William L. Sullivan, Chairman
James R. Ayer
Nora M. Barraford
Phyllis Crowley
Kathleen C. Downey
Alfred F. Eddy
Paul J. Edmunds
Robert P. Ellis
Kenneth Gibbs, Jr.
Barbara Glazer
Merrill H. Goldwyn
Emmet J. Grandone
Mary E. Herx
Jean E. Johnson
Anne Normandin
Jeffrey L. Roberts
Helen B. Stone
Richard E. Sullivan
Robert E. Todd
Robert L. Walker
Charles Wasilko

The English Department offers a major leading to either a B.A. or B.S. degree. If this major is combined with a minor in Secondary Education, the graduate will be qualified to teach English at the secondary level; a major without an education minor may prepare for graduate school or for a career in the communication arts or in business. Course offerings in the department aim to help the student, whether or not he is an English major, to appreciate and understand great works of literature as well as to write effectively. The latter is specifically stressed in writing courses but also figures in most literature courses through written assignments and analysis of style. The literature courses, comprising a majority of the departmental offerings, present a variety of approaches: panoramic surveys, period and genre studies, intensive study of a single author, and literary criticism. Comparative literature courses provide an acquaintance with masterpieces of other languages, read in translation.

Students may elect to minor in English. It is recommended that the English minor take a minimum of 18 semester hours in English, including Survey of American Literature and Survey of English Literature.

ENGLISH MAJOR REQUIREMENTS

English majors are required to take at least 36 semester hours in English exclusive of En 101. Required courses are: Survey of American Literature (En 110 or 111), Survey of English Literature (En 120 and En 121), and Shakespeare (En 450). An English major should maintain a 2.5 Quality Point Average in English.

RECOMMENDED FRESHMAN PROGRAM FOR ENGLISH MAJORS (B.A./B.S.)

FALL SEMESTER		SPRING SEMESTER	
English Composition	3	Survey of American Literature	3
Foreign Language	3	Foreign Language	3
Physical Education	½	Physical Education	½
2 Distribution Requirements	6	2 Distribution Requirements	6
English Elective	3	English Elective	3
	15½		15½

DEPARTMENT OF

FOREIGN LANGUAGES

Vincent R. DeBenedictis, Chairman
Francisco Alcala
Johanna M. Butler
Jennie M. Celona
Elisabeth DeGouge
Yvonne L. Gallant-Martel
Philip H. Grimes
Ronald J. Hartwig
Margaret A. Kittredge
Harold D. Neikirk
Francis J. O'Connor
Katharine M. Shea

The objectives of the department are to offer programs which develop and enhance one's functional mastery of the listening, speaking, reading, and writing skills of a foreign language. In addition, courses in the appreciation and understanding of the literature and civilization provide other insights. Students majoring in French and in Spanish, with a minor in Education, are prepared as prospective language teachers on the junior and senior high school level. Likewise, majors in elementary education may concentrate in Spanish and in French, thus meeting local needs for bi-lingual education. Majors not interested in teaching may prepare for graduate school or for a career in other professions which require foreign language skills, such as sociology, the diplomatic corps, and business and commerce.

Depending upon placement and prior preparation in a foreign language, degree candidates may begin foreign language studies by electing either a beginning or an intermediate level course.

Those students planning to major in a foreign language must successfully complete at least 30 semester hours *beyond the beginning level courses.* In order to complete the required number of courses and to elect in proper sequence, the candidate must choose his major concentration as early as possible in his academic career.

Minors are offered in French, Spanish, and German. Eighteen semester hours credit are required for each minor.

Required Courses for Spanish Majors are as follows: Intermediate Spanish I and II, Advanced Spanish Composition I and II, Spanish Conversation, Advanced Spanish Conversation, Readings in Spanish Literature, and Spanish Civilization.

Required Courses for French Majors are as follows: Intermediate French I and II, Survey of French Literature I and II, Introduction to French Phonetics, Advanced French Composition, Conversational French, and General French Civilization.

RECOMMENDED FRESHMAN PROGRAM FOR FRENCH AND SPANISH MAJORS (B.A./B.S.)

FALL SEMESTER		SPRING SEMESTER	
English Composition	3	Elective	3
Int. French, major OR		Int. French, major OR	
Int. Spanish,major	3	Int. Spanish, major	3
Physical Education	½	Physical Education	½
Distribution Requirements	3-4	Distribution Requirements	3-4
European History OR		English Literature	3
Latin American History	3	Elective*	3
Elective*	3		
	15½-16½		15½-16½

**Advanced Composition or Advanced Conversation in a foreign language may be taken as an elective with special permission from the Department.*

DEPARTMENT OF

GEOGRAPHY and GEOLOGY

Robert F. Perry, Jr., Chairman
George T. Downey
Richard G. Hunt
Ronald W. Hurd
George A. Knadler
Robert E. Linger
Rita M. L. Morris
Robert W. Thompson

The Department of Geography & Geology offers a number of courses leading to a major in the field of Geography for students pursuing the B.A. or B.S. degree. A minor in Geography and a "concentration" in Geography are also available. There are a few courses offered in Geology for interested students who may wish to use these courses to fulfill natural science requirements in their program.

GEOGRAPHY MAJOR REQUIREMENTS

A major in Geography should elect the following required courses as early as possible in his program: Principles of Physical Geography, Principles of Cultural Geography, Geography of North America, Cartography and Geographic Techniques. In addition to the above required courses all majors must select at least one advanced course in the physical, cultural and regional groups. At least 30 semester hours of credit in Geography are required to complete a major. No more than 45 semester hours will be accepted toward the degree.

REGIONAL GEOGRAPHY

Geography of Europe
Geography of Asia (excluding U.S.S.R.)
Geography of South America
Geography of Middle America
Geography of U.S.S.R.
Geography of Africa
World Regional Geography

SYSTEMATIC CULTURAL GEOGRAPHY

Economic Geography
Political Geography
Urban Geography
Geography of Manufacturing
Conservation and Natural Resource Management

SYSTEMATIC PHYSICAL GEOGRAPHY

Hydrology
Physical Geology
Historical Geology
Climatology
Geomorphology
Meteorology
Oceanography

SPECIAL COURSES IN GEOGRAPHY

The Teaching of Geography
Readings and Directed Research

RECOMMENDED FRESHMAN PROGRAM FOR GEOGRAPHY MAJORS (B.A./B.S.)

FALL SEMESTER		SPRING SEMESTER	
English Composition	3	Economics	3-4
Foreign Language	3	Foreign Language	3
Physical Education	½	Physical Education	½
Humanities Distribution Requirements	3	Humanities Distribution Requirements	3
Physical Geography	3	Cultural Geography	3
Physical Science	3	Physical Science	3
	15½		15½

DEPARTMENT OF

HEALTH and PHYSICAL EDUCATION - MEN

John P. Mockler, Chairman
Francis T. Dyson
James E. Girouard
Donald Read

The Physical Education Program offers the student an opportunity to participate in a wide variety of individual and team activities. This program is designed to develop a satisfying level of skill, fitness and comprehensive knowledge of rules and strategy which will meet the immediate and life long recreational needs of the student.

Two semester hours credit is required for graduation. A student is expected to participate in at least 6 different activities in meeting this requirement.

A student may elect to receive a pass-fail grade rather than a letter grade by so informing the Registrar.

At the beginning of each new activity, a proficiency test will be given and those students who pass the test will receive credit for that activity.

When there are extenuating circumstances, a student may apply for a waiver from the requirement. The department will meet and review all requests and grant waivers when feasible.

The department now offers an opportunity for interested students to minor in Physical Education. This new minor is coeducational and is in keeping with the trend toward directed leisure time activity in the modern world. Eighteen semester hours of approved courses are required. (See course listing.)

DEPARTMENT OF

HEALTH and PHYSICAL EDUCATION - WOMEN

Margaret M. Nugent, Chairman
Janet E. Demars
Helen R. Duquette
Donna F. Hebert
Helena V. Semerjian

The Women's Department of Physical Education seeks to create an awareness in the student of the necessity of adjusting her life-style to accommodate a concern for physical as well as intellectual well-being. Our objectives:

1. An understanding of man's basic need to be active for optimum health.
2. An understanding of the development and maintenance of physical capacities through exercise, skills, sports and dance.
3. An opportunity for social interaction through group, team and coeducational activities.
4. An opportunity for class room teachers to develop supplemental preparation in the area of physical education.

A major in Health and Physical Education is not available at the present time. A student, however, may elect a program of courses leading to a minor in Health and Physical Education.

Pe 100 is recommended for all freshmen women. Pe 101 courses are physical education activity courses. The student may elect according to her needs and interests from a variety of group and individual activities. Pe 300 courses are coeducational physical education activity courses which may be taken in place of Pe 101 courses.

DEPARTMENT OF

HISTORY and POLITICAL SCIENCE

Emmet A. Shea, Chairman
Philip J. Baram
Bruce S. Cohen
Clement S. Delaney
Bernard Goldsmith
Edwin R. Hedman
Jacob Hen-Tov
Robert G. Kane
Gertrude R. Leeds
Robert F. McGraw
Frank S. Minasian
A. Gibbs Mitchell, Jr.
Najib E. Saliba
Robert M. Spector
David J. Twiss
Francis G. Wallett
Cheng Yuan

The Department of History offers a wide variety of courses in the field of American, European, Asian, Latin American and Middle Eastern studies. In addition to the major and minor offered in these areas, a minor in Political Science is also available. This enables the student to elect courses dealing with national, state, and comparative government, international relations, and related fields.

The philosophy of the department is to provide the student with extensive course offerings to enable him to cope with a complex and ever-shrinking world. Course work in history and political science can prepare the student for a variety of professional and occupational opportunities; positions held by graduates in this field include teachers, librarians, archivists, curators of museums, secretaries of institutions, social workers, journalists, foreign correspondents, military correspondents and civil servants.

It is expected that the department will grow in size according to student needs; thus, the motto of the department — "To serve and to enlighten."

REQUIREMENTS FOR HISTORY MAJORS

In order to provide the breadth, as well as allow for a specialized program, the Department requires the following distribution of courses for all History majors: United States History I and II, and two other U.S. History courses; History of Western Civilization I and II, and two other non-U.S. history courses. The remainder of the student's program will be coordinated with an advisor in order to develop a thorough understanding within a particular area (e.g. time period, geographical location, developmental analysis, etc.). A total of 36 semester hours in history is required for a major.

RECOMMENDED FRESHMAN PROGRAM FOR HISTORY MAJORS (B.A./B.S.)

FALL SEMESTER		SPRING SEMESTER	
English Composition	3	Elective	3-4
Foreign Language	3	Foreign Language	3
Physical Education	½	Physical Education	½
Distribution Requirements	3-4	Distribution Requirements	3-4
History of Western Civilization I	3	History of Western Civilization II	3
Principles of Political Science OR Social Science Course	3	American Government OR Social Science Course	3
	15½		15½

DEPARTMENT OF

MATHEMATICS

Evelyn Robinson, Chairman
Vito D. Campo
Anthony M. Devoe
John C. Hayes
Marshall J. Kotzen
W. Mack Hill
Robert J. Perry
Robert W. Redding
Kenneth Schoen
William Spezeski

The baccalaureate degree candidate in Mathematics can train for various programs. He may prepare himself for a teaching career, or he can obtain the necessary background for advanced study, or he may prepare himself for research work.

Thirty semester hours of credit are required by the college to meet the minimum standard for a major in mathematics. The course offerings in Calculus I, II, III, IV, and Modern Mathematics are required for mathematics majors.

Eighteen semester hours of credit are required by the college to meet the minimum standard for a minor in mathematics. The course offerings in Calculus I and II and Modern Mathematics are recommended for mathematics minors. Those students in Elementary Education who have a concentration in mathematics should consult the Elementary Education Department for further information.

Although the department offers College Algebra, Trigonometry, Analytic Geometry, and Computer I and II, these courses may not be used to fulfill the requirements of the mathematics major for those students who have enrolled at the college after January 1, 1971.

There are now 16 courses or 50 semester hours from which the major may choose. Courses elected by fewer than five students may not be offered.

The student who plans to continue to a more advanced career in the field is urged to take Abstract Algebra, Linear Algebra, Number Theory, as well as Advanced Calculus. Those who plan to teach at the Secondary level are urged to take Modern Geometry, Linear Algebra and History of Mathematics. Probability and Statistics should be useful for those interested in actuarial work.

Every major chooses an adviser from among the members of the department. The adviser will help him to plan his course so that he will fulfill not only his math requirements, but also the requirements of the college for the degree.

The Mathematics Club offers the student the opportunity to meet with those in his field. Guest speakers will keep the student informed of many current developments in mathematics.

RECOMMENDED FRESHMAN PROGRAM FOR MATHEMATICS MAJOR (B.A./B.S.)

FALL SEMESTER		SPRING SEMESTER	
English Composition	3	Elective	3-4
Foreign Language	3	Foreign Language	3
Physical Education	½	Physical Education	½
Distribution Requirements	3-4	Distribution Requirements	3-4
Calculus I	4	Calculus II	4
Modern Mathematics	3	Computer I	3
	16½		16½

DEPARTMENT OF

MEDIA

William D. Joyce
William Byers
Paul Davis
Bernard L. McGough
Garrett Mitchell
Vincent Piccolo

The Media Department prepares students to become professional staff members competent to organize, administer, and operate school media programs in accordance with certification laws for school librarians and audiovisual media specialists. It aims to assist students taking majors or minors in education to gain an understanding of the use of modern learning resources and their supportive technology. It also offers all students the opportunity to become acquainted with the basic sources of information, the role of the Learning Resources Center, and the newest developments in the field of communication and learning technology.

There is no major in library science or audiovisual media specialization at the undergraduate level. However, several options are offered if the student wishes to either minor or concentrate in these areas.

Any student may elect a minor in Library/Media. Consultation with both his major advisor and the chairman of the Media Department is strongly recommended in order to develop a program which best meets the student's educational and/or vocational goals. A minimum of eighteen semester hours of departmental offerings is required.

Elementary Education majors may wish to concentrate in Library/Media. This program could be designed to emphasize library science courses, audiovisual production courses, or a combination of both areas. Fifteen semester hours of credit, approved by major advisor, are required.

Elementary Education majors may fulfill concentration requirements with a special program in School Library Science. This option will enable students to meet the Massachusetts requirements for School Librarian Certification: twelve semester hours of course work in any four of these areas – Philosophy of Education, Psychology of Education, Methods and Materials, Curriculum Development, Reading, or Guidance. In addition, specific required courses are as follows: Introduction to Reference Sources, Administration of the School Learning Resources Center, Cataloging and Classification, Learning Resources for Children, The Librarian in the Modern School, and Field Experience. Freshman who have decided to embark on this program must contact the Media Department Chairman for assignment to ancillary advisor.

DEPARTMENT OF

MUSIC

Abram Kaminsky, Chairman
Louis J. Celona
Susan M. Hickok
Robert Sahagian

To meet the needs of students who wish to fulfill their fine arts requirements in music and for music minors, the Music Department offers a choice of courses in the literature and theory of music and in music education. For those who wish to take part in choral or instrumental activities, either individually or with a group, there are electives in applied music which can be repeated each semester for credit. These include the College Choir, the new Worcester State College Minstrels, the College Community Orchestra, the Concert Band, and Instrumental Ensembles in brass, woodwinds, and piano which participate in concerts at the college, in the community, in exchange concerts with other colleges and in benefit concerts. These organizations have made significant contributions to the cultural life of the college and the community.

Whereas appreciation, understanding, progress, and quality in music are considered as goals of achievement by the Music Department, music as an educational factor in developing and broadening the individual student is also an important part of its philosophy.

One of the largest organizations of the College is the Choir. This is made up of men and women who are selected on a try-out basis. In addition to the Christmas and Spring Concerts, the choir participates in college functions and in exchange concerts and programs with other colleges.

In addition, there is the New Worcester State College Minstrels which also takes part in college concerts and exchange programs. A wide variety of musical types and styles is sung by women who are admitted by audition during the first two weeks of each semester.

The College Community Orchestra, Concert Band and Instrumental Ensembles are open to instrumentalists who wish to develop and progress in their appreciation and understanding of standard repertoire, techniques of concert performance, and instrumental routine. These organizations take part in programs both at and away from the college and in benefit concerts.

A major in Music is not available at the present time. A student, however, may elect a program of courses leading to a minor in Music.

DEPARTMENT OF

PHYSICS

Harold L. Chapman, Chairman
William Bellanger
Geoffrey J. Garrett
Charles J. Glassbrenner
Robert F. Kelley
Edward H. Leonard

INCLUDING NATURAL SCIENCE MAJOR

Students may elect courses in the Physics Department to gain an appreciation of Physics fundamentals as part of a broad education, or to obtain background for technical science courses. Science-oriented students minoring in Secondary Education may major in Physics or form a *Natural Science major* by taking a sampling of Physics courses along with science courses in other fields. Students majoring in Physics should note that graduate study is considered essential for a career in Physics.

PHYSICS MAJOR REQUIREMENTS

Physics majors must complete a minimum of 30 credit hours in courses offered by the Physics Department. Mathematical Physics I and II, Mechanics I, and Electricity and Magnetism I are required of all Physics majors. In addition, the department requires a minimum of one year of Calculus and one year of Chemistry.

The Physics elective courses should be selected to fit the needs and future plans of the individual student.

RECOMMENDED FRESHMAN PROGRAM FOR PHYSICS MAJOR (B.A./B.S.)

FALL SEMESTER	
English Composition	3
Foreign Languages	3
Physical Education	½
Distribution Requirements	3-4
Physics I	4
and Calculus I	4
OR	
General Physics I	4
and Appropriate Mathematical Course	3-4
	16½-18½

SPRING SEMESTER	
Elective	3-4
Foreign Language	3
Physical Education	½
Distribution Requirements	3-4
Physics II	4
and Calculus II	4
OR	
General Physics II	4
and Appropriate Mathematics Course	3-4
	16½-18½

NATURAL SCIENCE MAJOR REQUIREMENTS

This major is an interdepartmental program, administered through the Department of Physics, and structured through an advisory committee consisting of representatives from the following departments: Biology, Chemistry, Geography, Mathematics and Physics. The program is designed to give a broader view of the sciences than is usually obtained in a traditional under-graduate major in a single science. Students electing this major should be aware that a lack of depth in a single science will usually limit the opportunities for graduate study in a single science. The major is ideally suited for the preparation of science teachers in the areas of general science, earth science, and physical science. Concentration in mathematics, computer science, and environmental science may be arranged.

A minimum of 38 semester hours is required for this major. The student must choose courses from the offerings of the above mentioned departments to provide the following minimum distribution: Two semesters of approved mathematics, four semesters is any ONE science, and two semesters in each of any other TWO sciences.

RECOMMENDED FRESHMAN PROGRAM FOR NATURAL SCIENCE MAJORS (B.A./B.S.)

FALL SEMESTER		SPRING SEMESTER	
English Composition	3	Electives (2)	6-8
Physical Education	½	Physical Education	½
Distribution Requirements	3-4	Distribution Requirements	3-4
General Physics I	4	General Physics II	4
Trig. or Algebra	3	Trig. or Algebra	3
Elective	3		
	16½-17½		16½-17½

DEPARTMENT OF

PSYCHOLOGY and PHILOSOPHY

Joseph C. Lonergan, Chairman
Neil F. Brophy
Aldona L. Daly
Lois Douglas
Bernard J. Guarini
Joline N. Jones
Gordon S. Matheson
John M. Nash
Richard A. O'Connor
Dion Schaff
Joseph A. Shea
G. Flint Taylor
Donald F. Traub
James D. Widmayer

PSYCHOLOGY

The undergraduate offerings in psychology are designed to acquaint the student with basic theories, principles and laws of human behavior. The undergraduate program offered emphasizes the material that is foundational to all psychology, and offers the student an educational background for the wide variety of vocational opportunities.

Students enrolled for the major in psychology begin with a core of courses which serve as a foundation for later course work in content areas such as developmental psychology, social psychology, psychology of learning, perception and thinking, motivation and emotion, and abnormal psychology.

This program is supplemented with course work in the humanities, biological sciences, social sciences, physical sciences and mathematics.

A Psychology Honors Program is being designed for those exceptionally able students who wish, in their major, to pursue an intensive and somewhat independent study of psychology and to engage in psychological research. It is directed toward the integrating of a substantial body of theoretical and factual information, and the development of creative scholarly skills, by independent study, seminars and extended research experience. Particular emphasis is laid on the planning of an individual program for the student that will combine his specialized interests with the body of basic general psychology essential for all students who are undertak-

ing their first two years of study in the field. The plan will include arrangements for continuous supervised research activities from the beginning of the student's junior year until the end of the Fall semester of his senior year, at which time he will submit a written report of his work as a thesis.

Students planning to continue for graduate study should select their under-graduate course work carefully with their advisor to assure meeting prerequisites for advanced study.

PHILOSOPHY

Philosophy at Worcester State College seeks to fulfill the overall purpose of providing the philosophical vision that is essential for establishing an interdisciplinary approach to education in line with the values and goals of a liberal arts college. It seeks specifically to demonstrate that Philosophy as an academic discipline is integral to the education of the whole man through the civilization and cultivation of a critical and humane intelligence.

The objectives of philosophical instruction are two-fold: first, to acquaint the student with the major men and traditions of philosophy and the basic problems (political, social, moral and metaphysical) in the Ancient, Medieval, Modern and Contemporary periods; secondly, to introduce the student to the tools of philosophical inquiry in order to investigate their total experience, to develop their own philosophical point of view and to discover the meaning of their lives. Students may choose individual courses which will complement their programs, or may elect to minor in this subject.

PSYCHOLOGY MAJOR

Required for a major degree in Psychology are the following courses: General Psychology I-II, Psychological Methods, Historical and Contemporary Systems and Psychological Statistics. Elective Psychology courses shall make up the remainder of the student's program. A total of 36 semester hours in Psychology is required.

RECOMMENDED FRESHMAN PROGRAM FOR PSYCHOLOGY MAJORS (B.A./B.S.)

FALL SEMESTER		SPRING SEMESTER	
English Composition	3	Elective	4
Foreign Language	3	Foreign Language	3
Physical Education	½	Physical Education	½
Distribution Requirements	3-4	Distribution Requirements	3-4
General Psychology	3	General Psychology	3
Introductory Sociology	3	Distribution Requirement	3
	15½-16½		15½-16½

DEPARTMENT OF

SECONDARY EDUCATION

Manuel Zax, Chairman
J. William Bigoness
Michael A. Burke
David W. Hilton
Felix E. Masterson
J. Francis O'Mara
Chad C. Osborne
Carl H. Peterson
David H. Quist
Joseph E. Zegarra

The basic intent of a minor in Secondary Education is to adequately prepare students to become properly trained and qualified for certification as teachers in secondary schools. Teacher certification requirements vary from state to state. The two required courses in secondary education plus student teaching meet the minimum education course requirements for certification in Massachusetts. However, we feel a broader knowledge of the teaching environment is needed to meet the multiple demands in the teaching field. Therefore, a minimum of 18 credit hours in education is required for a minor in secondary education. Student teaching credits are not to be included in the 18 semester hour minor. This course is offered to meet certification requirements. A written application to minor in secondary education must be submitted to the Department of Secondary Education during the first semester of the sophomore year, on a form provided by the major adviser. Action on the admission request will be taken by a department admissions committee.

COOPERATING DEMONSTRATION SCHOOLS AND FACULTY

Chandler Street Junior High School – Mr. John S. Laws, Principal; Miss Doris M. Joyce, English; Mr. James J. Lyons, Social Studies, and Mr. Frank L. Warren, Mathematics.

Doherty Memorial High School – Mr. John F. O'Connor, Principal; Mr. Everett W. Moir, Jr., Biology; Miss Helen A. Friel, French, and Mr. Richard P. Donohue, History.

REQUIREMENTS FOR A MINOR IN SECONDARY EDUCATION

Eighteen hours credit are required to earn a minor in Secondary Education. The required courses must be supplemented by elective courses EXCLUSIVE of Student Teaching. Student Teaching may be taken as an elective beyond the 18 semester hours required for a minor in Secondary Education. Students must elect the fol-

lowing courses prior to Student Teaching: Principles and Curriculum of Secondary Education, Methods and Skills in Teaching (of content major), Teaching of Reading in Secondary Schools (required of all English majors).

Approved Elective Courses:

Ed 101, 102	History and Philosophy of Education	Ed 170	Educational Psychology
Ed 105	Education and Existential Philosophy	Ed 600	Orientation to Secondary Education (Sophomores only)
Ed 111, 112	Educational Measurement and Evaluation		
Ed 121, 122	Principles of Guidance	Ed 690	Teaching of Reading in Secondary Schools
Ed 130	Education for the Gifted	Ed 695	Diagnostic and Remedial Techniques in Secondary Reading
Ed 140	Urban Education		
Ed 150	Education and Race Relations	Ed *701, 702	Student Teaching
Ed 160	Social Action Education Practicum	Ed 705	Seminar in Secondary Education

Ed 710	Independent Study in Education
Me 140	Utilization of Instructional Materials
Me 320	Introduction to Screen Education *(For course description see Media Department)*
Ps 171, 172	Psychology of Adolescence Offered on half-semester basis, first semester only *(For course description see Psychology Department)*

**Student Teaching may be chosen as an elective ONLY with the approval in writing of the Secondary Education Department AND the Chairman of the Department of major concentration area. Forms will be provided.*

RECOMMENDED JUNIOR-SENIOR PROGRAM FOR SECONDARY EDUCATION MINORS (B.A./B.S.)

IMPORTANT NOTE:

Students planning to minor in Secondary Education should consult their subject major advisor for recommendation for placement of Education Courses. The Education electives may generally be taken in any semester of any year if prerequisites are met. However, the student is cautioned to plan his first semester senior year carefully. He must elect a minimum of two approved elected courses (see above) from those offered on a half-semester basis to complement the half-semester of Student Teaching.

First Semester — Junior Year	
One approved Education elective course	
Second Semester — Junior Year	
Principles and Curriculum of Secondary Education	3 semester hours
Methods and Skills in Teaching (subject major)	3 semester hours
One Secondary Education or approved elective course	3 semester hours
First Semester — Senior Year	
Ed 700 Student Teaching (one half semester)	8 semester hours
Two or three Secondary education or approved electives which would be taken during the half semester when NOT Student Teaching	6-9 semester hours

DEPARTMENT OF

SPEECH and DRAMATICS

MAJOR IN COMMUNICATION DISORDERS

Carleton E. Saunders, Chairman
Richard E. Callahan
Rose D. Guerin
Carol Lysaght
John F. McLaughlin
David A. Seiffer
Ann Marie Shea

The Speech and Dramatic Department offers courses in two areas (a) Speech and Hearing Sciences (Communication Disorders), and (b) Theater.

The Communication Disorders program includes a major, a minor, and an area of concentration for elementary education majors. Each of these options may be used to meet the Massachusetts requirements for certification as a teacher of speech and hearing handicapped. (See the Special Programs section of this Catalog for a listing of courses required for certification.)

Toward this end, the department maintains a speech and hearing clinic at the college. Staff members, and students under staff supervision, evaluate children from the surrounding communities for possible placement in the clinic. Complete diagnostic evaluations are done with each child, including articulation and language testing, visual-motor and cerebral dominance screening tests, and audiological and auditory discrimination testing. If a child is then accepted into the clinic for speech, language, or auditory therapy, a student is assigned to work with him on a bi-weekly or weekly basis. Staff members supervise and evaluate this therapy.

COMMUNICATION DISORDERS MAJOR REQUIREMENTS

Each major must successfully complete thirty-six semester hours of communication disorders courses. The following courses are required: Phonetics, Anatomy and Physiology of the Speech and Hearing Mechanism, Speech Pathology, Diagnostic Hearing Testing, Auditory Training and Speech Reading, Speech Correction, and Rhythm Problems and Allied Disorders. The remaining twelve semester hours of courses are elected from the communications disorders electives in consultation with the student's faculty advisor.

RECOMMENDED FRESHMAN PROGRAM FOR COMMUNICATION DISORDERS MAJORS (B.A./B.S.)

FALL SEMESTER	
Phonetics	3
English Composition	3
Physical Education	½
General Psychology	3
Distribution Electives	6
	15½

SPRING SEMESTER	
Anatomy & Physiology of the Speech & Hearing Mechanism	3
Physical Education	½
Psychology Elective	3
Distribution Electives	6
Elective	3
	15½

The Elementary Education Major

BACHELOR OF SCIENCE IN EDUCATION

GENERAL REQUIREMENTS

ADMISSION TO THE PROGRAM

PROFESSIONAL EDUCATION REQUIREMENTS

BACCALAUREATE DISTRIBUTION REQUIREMENTS

CONCENTRATION ELECTIVE REQUIREMENTS

THE ELEMENTARY EDUCATION DEPARTMENT

KINDERGARTEN-PRIMARY PROGRAM
(Kindergarten - Grade 3)

INTERMEDIATE PROGRAM
(Grade 4 - 6)

Bachelor of Science in Education

General Requirements

CREDIT HOURS

Every candidate for the Bachelor of Science in Education degree must earn 128 semester hours of credit before graduation.

RESIDENCE

Normally at least 30 credit hours of the total 128 must be taken at Worcester State College. The normal period of residence and study required of a student who enters as a Freshman is four years. All students should be in residence for the senior year. Credits for student teaching must be earned at this college.

GRADUATION GRADE

A quality point average of 2.0 or better must be attained in Education courses, and an average of 2.0 must be attained overall in order to qualify for graduation.

COURSE LOAD

Minimum — A full-time student is required to register for courses totaling a minimum of 12 semester hours of credit per semester.

Maximum — A student may take up to 18 semester hours of credit per semester without special permission. Beyond this, official permission is required of the Associate Academic Dean (Education).

Admission to the Program

Since a student entering this program is setting a specific professional goal, admittance to the College does not guarantee completion of his academic career in elementary education. During his sophomore year, the student must make formal application for admittance into the Elementary Education program. Regualtions governing this application are as follows:

1. An all-college average of 2.00 based on a 4.00 scale after three semesters of college work. In exceptional instances a person may be admitted provisionally although his quality point average is not at the 2.00 level. If in his most recent course work he has shown consistent gain, he will be required to secure a statement from a faculty member willing to act as a sponsor for his admission.

2. Each candidate will be required to submit a handwritten letter of application to his faculty advisor to be submitted to the Chairman of the Elementary Education Department. This letter will be submitted by November 1 of the student's Sophomore year.

   In order that the letter may present an indication of the candidate's all-round fitness for admission, he will be requested to submit information concerning the reasons for his interest in the field of Elementary Education, and the personal qualities which he feels fit him to teach at this level.

3. Names of all applicants will be listed and circulated to members of the Education Department with the request that they report questionable reactions to any individual on the list. These forms will be returned to the Chairman of the Elementary Education Department for subsequent action by the Admissions Committee.

   The first circulation will be made January 1 to be returned not later than January 15. The second circulation will be made April 1 to be returned no later than April 15. Acceptance or rejection will be made by May 1, by a personal letter addressed to the applicant.

   The student has the right of appeal within one week following notification of rejection. The Chairman of the Department will call a meeting in May at which appeals may be presented.

   The Admissions Committee will consist of five voting members: The Chairman of the Department, three faculty members chosen at random by the Chairman, and one faculty member chosen by the student from the Education Department.

   There will be a list of ten second-semester Elementary Seniors who have indicated their willingness to serve with the Admissions Committee. The student may choose one of these students to serve with the faculty members of the Admissions Committee.

4. Information concerning the applicant's acceptable use of American communication patterns will be obtained through the form in (3) above.

   These standards will govern admission of those students who have had their previous preparation at Worcester State College.

   Admission of *transfer students* will conform to the same procedure, except for the following additional requirement:

Each individual will appear for a personal interview bringing with him a complete transcript of all courses completed during the period of his college education.

Professional Education Requirements

Students preparing to teach in the elementary school are required to identify their area of interest (kindergarten-primary or intermediate) and complete the professional sequence listed in the appropriate four-year curriculum plan which is located in the following section of this catalog. Required courses are denoted by (*) in the recommended programs listed on pages 70 , 71 . A minimum of 39 semester hours must be earned in this area.

Baccalaureate Distribution Requirements

Each student is required to complete a minimum number of semester hours in the following disciplines:

ARTS	Fine Arts (Music and Art)	6 semester hours
HUMANITIES	Literature	9 semester hours
	History	6 semester hours
NATURAL SCIENCE AND MATHEMATICS		
	Laboratory Sciences	12 semester hours
	Mathematics	6 semester hours
SOCIAL SCIENCES	Economics	3 semester hours
	Geography	6 semester hours
	Psychology	9 semester hours
	Sociology	3 semester hours
GENERAL REQUIREMENTS	English Composition	3 semester hours
	Federal and State Constitutions*	1 semester hour
	First Aid	½ semester hour
	Physical Education	2 semester hours
	Speech	2 semester hours

**Required of ALL STUDENTS who do not take one of the following courses: Hi 111, Hi 112, Hi 210*

Concentration Elective Requirements

Every elementary education major must select a minimum of 15 semester hours of concentration in a content field in addition to those listed in the Baccalaureate Distribution Requirements.

DEPARTMENT OF

ELEMENTARY EDUCATION

George T. Joseph, Chairman
Ruth J. Allen
Virginia Bereit
Josefina Bunuan
Kathleen Burns
Sr. Josephina Concannon
Arthur Q. Fogelberg
Charles E. Geer
Ruth Griffiths
Nancy E. Harris
Mary T. Hayes
Marilyn Helfenbein
Marion J. Jennings
Nancy A. Johnson
Catherine P. Lewicke
Mary-Ellen Meegan
Paul F. O'Neil
Barbara Pilon
Josephine T. Polito
Catherine I. Quint
Eugene M. Scanlon
Courtney Schlosser
Maureen C. Stefanni

The Elementary Education Department has as its purpose the preparation of teachers for the elementary school. There are two programs offered in this field: Kindergarten-Primary, which prepares for kindergarten to grade 3; and Intermediate, for those planning to teach in grades 4, 5, and 6. Both programs are designed to fulfill the requirements of the Bureau of Teacher Certification and Placement of the Massachusetts Department of Education.

In addition to the courses taken for this certification, the department requires several additional professional education courses of its majors. These are designed to complement the basic baccalaureate distribution requirements. Each candidate must also select a subject area for concentration. This concentration is individually designed to provide a greater depth of understanding in one selected field. For the Intermediate teacher, the concentration becomes increasingly important in preparation for teaching in schools which are using team teaching, non-graded, or departmentalized approaches to instruction.

Minimal curricular requirements are summarized as follows:

Professional Educational	39 semester hours
Baccalaureate Distribution Electives	68 semester hours
Concentration Electives	15 semester hours
Undesignated Electives	6 semester hours
	Total 128 semester hours

AREAS OF CONCENTRATION

Art
Biology
Chemistry
English
French
Geography
Health and Physical Education
History
Library/Media
Mathematics
Music
Natural Science
Psychology
School Library Science
Sociology
Spanish
Speech Therapy
Theater
Urban Studies

Students may be assigned to an elementary school for the student teaching experience in a specified content area where departmentalized programs exist.

COOPERATING DEMONSTRATION SCHOOLS AND FACULTY

Lamartine Street School – Mr. James E. Feeley, Principal; Mr. John F. Monfredo, Grade 5.

May Street School – Mr. Joseph F. Mahoney, Principal; Mrs. Mary E. McGee, Kindergarten; Mrs. Virginia H. Gvazdauskas, Grade 3; Mrs. Elizabeth Philbin, Grade 3; Mrs. Barbara H. B. Hayes, Grade 5; Mr. Donald F. Moran, Grade 5.

Tatnuck School – Mr. Francis R. Hickey, Principal; Mrs. Grayce C. O'Neil, Kindergarten; Miss Anna B. Rothemich, Grade 1; Miss Carmille C. Mesale, Grade 2; Miss Mary E. Brennan, Grade 3; Miss Margaret M. Curran, Grade 3; Miss Rosemary Norton, Grade 4.

RECOMMENDED PROGRAM

Elementary Education Curriculum

Kindergarten - Primary Grades

1ST SEMESTER

FRESHMAN		SOPHOMORE		JUNIOR		SENIOR	
English Composition	3	Laboratory Science	3	Sociology	3	*Student Teaching and Seminar	12
Laboratory Science	3	Geography	3	*Music in Elem. School	2	*Language Arts for Primary Grades	3
Mathematics	3	Literature	3	Psychology	3		
History	3	Music	3	*Methods and Materials in Soc. St. & Science	3		
General Psychology I	3	*Orientation to Elementary Education	2	Electives (2)	6		
Physical Education	½	Physical Education	½				
Speech	2	Elective	3				
	17½		17½		17		15

2ND SEMESTER

English	3	Laboratory Science	3	*Reading in Elem. School	3	*History & Philosophy of Ed.	3
Laboratory Science	3	Geography	3	*Children's Literature	2	First Aid	½
Mathematics	3	Literature	3	*Modern Instruction	2	Economics	3
History	3	Art	3	*Art in Elem. School	2	Electives (3)	9
Psychology**	3	Physical Education	½	*Math in Elem. School	2		
Physical Education	½	Elective	3	Measurement and Evaluation	3		
				Elective	3		
	15½		15½		17		15½

**Required Education courses. In addition, Education courses must be elected to meet the minimum of 39 credits in Education, with the approval of a faculty advisor.*

***Child Growth and Development is required as one of the Psychology courses.*

RECOMMENDED PROGRAM

Elementary Education Curriculum

Intermediate Grades

FRESHMAN		SOPHOMORE		JUNIOR		SENIOR	
1ST SEMESTER							
English Composition	3	Laboratory Science	3	*Modern Instruction	2	Psychology	3
Laboratory Science	3	Geography	3	*Reading in Elem. School	3	*Art in Elem. School	2
Mathematics	3	Literature	3	*Children's Literature	2	Economics	3
History	3	Art	3			First Aid	½
General Psychology I	3	Physical Education	½	Math in Elem. Sch. OR	2	Electives (3)	9
Physical Education	½	Elective	3	Science in Elem. Sch. OR	2		
				Social Studies in Elem. School	2		
				Electives (2 or 3)	6 (9)		
	15½		15½		15 (18)		17½
2ND SEMESTER							
English	3	Laboratory Science	3	*Student Teaching and Seminar	12	*History & Philosophy of Ed.	3
Laboratory Science	3	Geography	3	*Language Arts in Elem. School	2	*Music in Elem. School	2
Mathematics	3	Literature	3			Sociology	3
History	3	Music	3			*Measurement & Evaluation	3
Psychology**	3	Physical Education	½			Electives (2)	6
Physical Education	½	Elective	3				
Speech	2	*Orientation to Elem. Education	2				
	17½		17½		14		17

**Required Education courses. In addition, a methods course in the Area of Concentration must be taken. Additional Education courses must be elected to meet the minimum of 39 credits in Education, with the approval of a faculty advisor.*

***Child Growth and Development is required as one of the Psychology courses.*

SPECIAL PROGRAMS

ADMINISTRATIVE STUDIES NURSING EDUCATION PRE-DENTAL
PRE-MEDICAL URBAN STUDIES SPEECH & HEARING HANDICAPPED

Administrative Studies

This new academic program has been designed to meet many of the present and future needs of the region served by the college. It will provide the broad-based knowledge which people in administrative positions will need to understand and solve tomorrow's management problems.

The new major in Administrative Studies will be available within the Bachelor of Arts or Bachelor of Science structure beginning in the Fall of 1973. Areas of concentration in this new program will include Business Administration, Public Administration, and Health Services Administration.

Students may not be admitted into the program this year, although incoming freshmen may register as an Economics major and later transfer into the new program. Guidelines for the program call for a period of internship which will provide practical experience for students admitted into the program.

Nursing Education

The Board of Trustees (Division of State Colleges) in 1969 voted "that a cooperative arrangement be established at Worcester State College to offer a one-year program of study for nursing students in the four Worcester hospitals now maintaining diploma programs, effective in the Fall of 1970." Hospitals participating in this program include:

City Hospital
Memorial Hospital
St. Vincent Hospital
Worcester Hahnemann Hospital

Detailed information concerning these programs may be obtained by contacting the Director, School of Nursing, at any of the four cooperating hospitals.

Pre-Medical • Pre-Dental

Worcester State College offers a program for students who are interested in applying to a Medical or Dental School. These schools prefer the collegiate applicant who has excelled in his field of interest, whether it be in the sciences or in the humanities, and who possesses a sound scientific foundation. Whatever his major, it is expected that he will have acquired a broad, liberal education.

Nearly all medical and dental schools require one year of each of the following with laboratory: General Chemistry, Organic Chemistry, Biology and Physics. In addition, many schools require two years of a modern

foreign language, one year of English (including composition) and mathematics through calculus. It is advisable that these courses be completed by the end of the junior year in order that they may be properly evaluated by either a medical or dental school. In addition to these basic courses, a number of medical schools require one or more additional courses such as Comparative Vertebrate Anatomy, Embryology, Genetics, Physical Chemistry and Quantitative Analysis.

A student who is interested in medicine or dentistry should consult both his major advisor and a member of the Pre-Medical and Pre-Dental Advisory Committee early in his freshman year. Regardless of his major, the student would be well-advised to elect General Chemistry I and II and Biology I and II during his freshman year. The WSC Pre-Medical and Pre-Dental Advisory Committee is composed of the following members: Dr. Carol Chauvin, Department of Biology; Dr. Alan Cooper, Department of Chemistry; Dr. Marlin Kreider, Department of Biology; Dr. Estelle Zoll, Department of Chemistry.

Urban Studies

Worcester State College now offers its students an opportunity to minor in Urban Studies. The program is an interdisciplinary approach focusing on the urban situation. Economics, Education, Geography, History, Psychology, and Sociology are the disciplines now involved. The purpose of the program is to provide interested students an opportunity to study the dynamics of our nation's urban situation through a comprehensive classroom and fieldwork approach. Any student planning to work in an urban area upon graduation as a teacher, social worker, etc., should explore the possibilities of the Urban Studies Program. Interested students should contact Mr. Guarini, Urban Studies Program Coordinator, who, in consultation with the student's major advisor will structure an acceptable program of studies in this area.

Listed below are the presently accredited Urban Studies Course Offerings:

Contemporary American Problems
Urban Education
Education and Race Relations
Social Action Education Practicum
Urban Economics
Urban Geography
State and Local Government
Afro-American History
American Urban History
The Immigrant in American History
Social Psychology
Psychology of Culturally Deprived
Social Stratification
Sociology of Education
Deviant Behavior
Urban Sociology
Explorations in Race Relations

Speech and Hearing Handicapped - Teacher Certification

See Department of Speech and Dramatics for details. Requirements for this certification are as follows:

A bachelor's degree from an institution approved by the Board of Education.

Included in each candidate's program of preparation there shall be a minimum of 30 semester hours of credit, of which 18 semester hours shall be distributed over the following six required areas, each of which will be represented by at least one two-semester hour course:

Anatomy and Physiology of the Speech and Hearing Mechanism
Speech Pathology
Speech Correction including laboratory clinical practice or student teaching
Speech Reading and Auditory Training, including laboratory clinical practice or student teaching
Phonetics
Diagnostic Hearing Testing

The remaining 12 semester hours shall be selected from any four of the following areas:

Psychology of the Handicapped, or Language Disorders in Children
Principles of Teaching Handicapped Children
Child Development
Adolescent Development
Guidance
Educational Tests and Measurements
Mental Hygiene, or Abnormal Psychology, or Educational Psychology

NOTE: This certificate does not require a major, minor or concentration in Education.

ADMINISTRATION
and
FACULTY

ROBERT LEESTAMPER, President
Worcester State College

"Just being alive in the early 1970's is a bit frightening. Most of us experience a certain amount of daily anxiety. There's the threat of massive conflict, with weapons so destructive it's painful to think about them. There's the population explosion, and there's the strong possibility of ecological disaster. Here at home, there's racial strife, crime in the streets, worsening economic conditions, a run-away epidemic of destructive drug use — and just a general atmosphere of distrust in our institutions and in each other. Overseas, the war in Southeast Asia drags on and American prestige is at its lowest ebb in decades. It's easy enough to believe that this may be the worst era in our history, with the very survival of the human species threatened in so many ways.

"But for me at least, there's a bright spot in all of this. Things are very bad, but we know that they're bad. At no previous time in history has man had so much information about the terror of his situation. I'm optimistic enough to believe that this knowledge may motivate enough of us to do enough and to do it soon enough. And I'm optimistic enough to believe we can find enough answers, and find them in time.

"Our colleges, for all their shortcomings, are still the best training-ground we have for an enlightened citizenry. In our society, colleges are the key to the full development of human potential. and that development is the key to the kind of global consciousness we're going to need to survive in this time of global crises.

"I not only think we will survive, I think we'll go on to build a better human society. My highest ambition as President of Worcester State College is to help this institution to be part of that process."

Robert Leestamper

Administration

KENNETH BARTON
Chief Accountant, 1971
New England School of Accounting

WILLIAM BUTLER
Bursar, 1953
B.S. in B.A. Clark University

ROBERT A. DEVLIN
Director of Athletics, 1970
B.S. Holy Cross College, Ed.M. Boston University

JOHN R. DOWLING
Registrar, 1966
B.S. in Ed., Ed.M. Worcester State College

JOHN F. EAGER
Director of Program of Continuing Studies, 1952
B.S. Loyola University, Ed.M. Worcester State College

WALTER C. FALLON
Director of Placement, 1970
B.S. Holy Cross College, Ed.M. Fitchburg State College

LEONARD F. FARREY
Director of Counseling Services, 1965
B.S. in Ed., Ed.M. Worcester State College

RICHARD J. GILMARTIN
College Counselor, 1971
M.A. Fordham University

LOREN GOULD
Director of Institutional Studies, 1959
A.B., A.M. Clark University

ROBERT T. JONES
Director of Learning Resources Center, 1971
B.S., M.A., Ph.D. Syracuse University

PAUL JOSEPH
Manager of Recreation Facilities and Sports Information Director, 1971
B.A. Worcester State College

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NOTE: *The date appearing after each job-title indicates the year in which the individual joined WSC, rather than the year the current duties were assumed.*

COURSE DESCRIPTIONS

ART

Ar 100 **Introduction to Art** 3 semester hours

The theory and practice of art; analysis of methods and materials of the artists through use of slides and museum trips; studio work introduces student to technical procedure, principles of design, methods of representation.

Ar 110 **History of Art - Part I** 3 semester hours

A survey of art styles and movements from prehistoric man to Renaissance; painting, sculpture, architecture; museum trips will be required.

Ar 111 **History of Art - Part II** 3 semester hours

Art styles and movements from Renaissance to present; the effects of scientific advances and sociological changes; emphasis on painting, but including sculpture and architecture; museum trips required.

Ar 115 **Medieval Art** 3 semester hours

Developments in sculpture, architecture, and painting in Western Europe from c. 800 to c. 1400; naturalism and the heralding of the Renaissance; the effects of the social and intellectual climate on art.

Ar 116 **History of Renaissance Art** 3 semester hours

Development of art in Italy and northern Europe from c. 1400 to c. 1700; social and intellectual trends in their relationship to the arts; the changing status of the artist.

Ar 120 **History of American Art** 3 semester hours

Painting, architecture, sculpture, etc., from pre-revolutionary times to present; includes primative and black folk art.

Ar 125 **Art of the 20th Century - Part I Impressionism Through Cubism** 3 semester hours

Art movements from c. 1870 to the post World War I period; Cezanne, Gauguin, Van Gogh, Munch, Matisse, Picasso, etc., and the schools of architecture and sculpture which they influenced.

Ar 126 **Art of the 20th Century - Part II Post World War I to Present** 3 semester hours

Op, pop, black, minimal, and conceptual art; developments in Europe and United States.

Ar 200 **Introduction to Design** 3 semester hours

Two-dimensional design; exploration of form, line, and shape will be conveyed through sensory images and techniques; lecture and studio.

Ar 201 **Advanced Design** 3 semester hours

Advanced problems in two-dimensional design. Prerequisite: Ar 200

Ar 210 **Creative Painting I** 3 semester hours

The representative schools of painting; particular attention to personal applications; projects will use same techniques as the artist, but in a personal and creative way.

Ar 211 **Creative Painting II** 3 semester hours

A studio course concerned with individual painting projects. Prerequisite: Ar 210 or equivalent

Ar 215 **Drawing in Various Media** 3 semester hours

A studio course designed to acquaint the student with the various potentials of inks, pastels, charcoal, watercolors, etc. alone or in various combinations.

Ar 216 **Figure Drawing** 3 semester hours

Drawing of the male and female figure using pencil, conte, pastel, pen and ink and watercolor.

Ar 218 **Creative Crafts** 3 semester hours

A studio course investigating various techniques applicable to classroom teaching; stress on individual creative projects; batik weaving, stitchery, etc.

Ar 220 **Visual Conservation** 3 semester hours

Visual environmental trends within the United States; awareness of and a need for controlled environment through studies of devastation vs. concervation, organic vs. inorganic design, suburbia and urban planning, citizenship aesthetics, population, recreation and "systematic uglification."

Ar 230 **Architecture and City Planning** 3 semester hours

Growth and design of urban and regional centers in Europe and America in the 19th and 20th centuries.

Ar 300 **Contemporary American Aesthetics** 3 semester hours

Seminar and studio; the problems involved in the deteriorating American environment. Prerequisite: Ar 220.

Ar 320 **Sculpture I** 3 semester hours

An introduction to basic sculpture techniques; clay studies of the head and figure; plaster, including piece molds.

Ar 330 **Sculpture II** 3 semester hours

Work in the terra cotta technique; introduction to wood and metal sculpture (students must provide own wood chisels).

Ar 350 **Portrait Painting** 3 semester hours

A studio course designed to acquaint the student with various styles which can be used in a creative approach to portraiture. Prerequisite: Ar 211.

Ar 500 **Independent Study in Art** 1 to 3 semester hours

An opportunity for the student to engage in self-arranged studies according to individual needs and interests. A plan of study will be required prior to registration. Limited to Art minors with a minimum of 12 semester hours.

BIOLOGY

Bi 101
102 **General Biology I and II** 6 semester hours

Current biological problems as they apply to man, especially molecular and ecological factors. Bi 101 — an in-depth study of cell and living systems with laboratory concentrating on selected chemical and physical characteristics of life. Bi 102 — current biological problems such as pollution, population, radiation, nutrition, ecology and conservation, with laboratory concentrating on human problems as demonstrated in populations of animals and plants. Two lectures and a two hour laboratory per week. Recommended for non-majors.

Bi 103
104

Contemporary Biology I and II

6 semester hours

Fundamental biological, chemical, and physical principles common to all living systems at the molecular, cellular, and organismic level. Bi 103 — an in-depth study of the cell; energetics, molecular, developmental and genetic concepts. Bi 104 — the organism; comparative morphology, anatomy, and physiology of plants and animals, integration of the organism, mechanisms of self maintenance and evolution. Two lectures and a three hour laboratory per week. Bi 103 is a prerequisite to Bi 104. Recommended for Biology majors.

Bi 201

Invertebrate Zoology

3 semester hours

Anatomy, taxonomy, natural history and evolutionary relationships of selected invertebrate phyla; a review of the International Congress of Zoological Nomenclature and selected articles of its code; specimens are identified, classified, and dissected; two lectures and a two hour laboratory per week. Prerequisites: Six semester hours in Biology.

Bi 211
212

Human Anatomy and Physiology I and II

6 semester hours

Integration, organization and dynamics of normal human body systems; physiological experiments and dissection of organs and specimens. Bi 211 — concentrates on pre-tissue biology, histology, and skeletal, muscular and cardiovascular systems. Bi 212 — concentrates on digestive, excretory (water balance), endocrine, respiratory and reproductive systems. Two lectures and a two hour laboratory per week. Prerequisites: Bi 102 or Bi 104 or departmental permission. Recommended for non-majors.

Bi 213

Environmental Physiology

3 semester hours

Mammalian physiological systems involved in response to extreme natural and artificial environments; specific stresses, mechanisms of adaptation, pathology, and homeostatic mechanisms; two lectures and a two hour laboratory per week. Prerequisites: Bi 214 and Ch 111.

Bi 214

Mammalian Physiology

3 semester hours

Detailed physiology of the circulatory, digestive, excretory, muscular, nervous, and respiratory systems, including human systems; techniques for measuring physiological phenomena; experimental approach is stressed and student projects are encouraged; two lectures and a three hour laboratory per week. Prerequisites: 12 semester hours in Biology.

Bi 311

Comparative Vertebrate Anatomy

3 semester hours

Taxonomy and phylogeny of prochordates and chordates reviewed with concentration on systematic comparison of the morphology of representative chordates to illustrate evolution and establish homology, analogy, and nomenclature; identification and classification of specimens; dissection of shark and cat; two lectures and a two hour laboratory per week. Prerequisites: 12 semester hours of biology.

Bi 313

Vertibrate Natural History: Ectotherms

3 semester hours

Life histories, adaptations, distributions, ecology, systematics, and economic importance of poikilothermic (cold blooded) vertibrates (fish, amphibians, and reptiles) of the Northeastern United States; laboratory and field work concentrates on native species; two lectures and a two hour laboratory per week. Prerequisites: 9 semester hours of biology.

Bi 321

Embryology

3 semester hours

The history of embryology and ontogeny of selected invertebrate and vertebrate embryos; principles of cellular, tissue, and organ differentiation and organization; gametogenesis, fertilization, and development of extra-embryonic membranes; laboratory study of protochordate, frog, chick, and pig developmental stages; two lectures and a two hour laboratory per week. Prerequisites: Twelve semester hours in Biology.

Bi 323 **Endocrinology** 3 semester hours

The role of endocrine glands in the normal integration of animals; mechanisms of hormone action, functions, and interrelationship; three lectures per week. Prerequisites: Bi 212 or 214, Ch 111.

Bi 331 **Genetics** 3 semester hours

Cytological and biochemical basis of inheritance; nature and function of genetic material; Mendelian genetics; population genetics; laboratory investigations of practical problems; two lectures and a two hour laboratory per week. Prerequisites: 12 semester hours of Biology.

Bi 333 **Genetics and Metabolism** 3 semester hours

Major biochemical reaction-pathways and the genetics of regulation; processes dependent upon genotype and the organism's environment; two lectures and a two hour laboratory per week. Prerequisites: 12 semester hours of Biology.

Bi 341 **Entomology** 3 semester hours

Anatomy, behavior, habitat, natural history, physiology, and taxonomy of insects; ecological factors; chemical and biological control; insect specimen collections are required; two lectures and a two hour laboratory per week. Prerequisites: 9 semester hours in biology, including Bi 201.

Bi 352 **Parasitology** 3 semester hours

Disease-causing parasites; biological, ecological, and genetic aspects of parasitism; host-parasite interations; the concept of disease, adaptive modifications, vectoring, and parasite evolution; specimens will be collected and identified; two lectures and a two hour laboratory per week. Prerequisites: 12 semester hours in biology, including Bi 201.

Bi 401 **Field Biology** 3 semester hours

Interrelationships of living organisms and their environment; climatic, physiographic, and biological factors; plant and animal forms collected, identified, and associated; population densities and distributions; field and laboratory; student project emphasized; two lectures and a two hour laboratory per week. Prerequisites: 12 semester hours in biology.

Bi 411 **Molecular Biology** 3 semester hours

Genesis and function of classical biology with stress on molecular form; evolution, exploitation, and ramification of molecular structure in cells, organs, and organisms; demonstrations, experiments, and readings; two lectures and a two hour laboratory per week. Prerequisites: Bi 102, Ch 410, and/or consent of instructor.

Bi 490 **Biology Seminar** 2 semester hours

Preparation and presentation of biological topics, chosen with the advice and consent of a faculty advisor; minimum of two scheduled, departmentally supervised meetings per week. Prerequisites: Departmental permission, senior biology majors only.

Bi 495 **Biological Problems** 2 semester hours

Advanced semi-independent study of an approved biological problem, directed by a Biology department faculty member; minimum of two departmentally supervised meetings per week. Prerequisite: Departmental permission and consent of instructor.

Bi 501 **Botany** 3 semester hours

The plant kingdom; taxonomy, natural history, anatomy, and evolutionary relationships; identification, classification, dissection from a macro and microscopic viewpoint; two lectures and a two hour laboratory per week. Prerequisite: 6 semester hours in Biology.

Bi 503 **Botanical World** 2 semester hours

Understanding and appreciating the plant world; identification keys for native trees, flowers, algae, and fungi; lecture demonstrations, field trips; student collections are encouraged; recommended for non-biology majors and may NOT be used for biology major credit; two one hour meetings per week.

Bi 611 **Microbiology** 3 semester hours

The inter-relationship of host, parasite, and environment; morphology, physiology, stress factors, infection and immunity, epidemiology; microbiological techniques and appropriate experiments; two lectures and a two hour laboratory per week. Prerequisite: 6 semester hours of biology.

Bi 622 **Mycology** 3 semester hours

The fungal world from morphological, cytological, physiological, and evolutionary viewpoints; genera and species of economic importance; culturing techniques; two lectures and a two hour laboratory per week. Prerequisite: 9 semester hours in biology.

CHEMISTRY

Ch 105 **The Nature of Chemical Change** 3 semester hours

Properties of matter viewed through simple reactions of familiar substances; two lectures and a two hour laboratory per week.

Ch 110 **Introduction to Chemistry I** 4 semester hours

Atomic structure, quantum theory, chemical bonding, periodic trends, stoichiometry, equilibria and reaction rates, oxidation and reduction, acid and base theory, radioactivity and nuclear chemistry; three lectures and a three-hour laboratory per week. For students who do not plan to continue with intermediate-level courses in Chemistry.

Ch 111 **Introduction to Chemistry II** 4 semester hours

Continuation of Ch 110; concentration on organic and biochemistry; functional groups and reactions of organic chemistry, carbohydrates, proteins, lipids, nucleic acids, metabolic pathways, enzymes; three lectures and a three hour laboratory per week. Prerequisite: Ch 110.

Ch 120 **General Chemistry I** 4 semester hours

Principles of chemistry, atomic structure, quantum theory, chemical equations, chemical bonding, states of matter, solutions, and the elements of thermodynamics; three lectures and a three-hour laboratory per week. For science majors.

Ch 121 **General Chemistry II** 4 semester hours

Continuation of General Chemistry I. Oxidation and reduction, chemical kinetics, equilibrium in solutions, electro-chemistry, nuclear chemistry, and the descriptive chemistry of the elements; three lectures and a three-hour laboratory per week. Prerequisite: Ch 120.

Ch 201 **Organic Chemistry I (lectures only)** 3 semester hours

Structure, reactivity, reactions, mechanisms, and stereo-chemistry of the alkanes, alkynes, dienes, alkyl halides, and benzene; three lectures per week. Prerequisite: Ch 120-121.

Ch 202 **Organic Chemistry II (lectures only)** 3 semester hours

Alcohols, ethers, carboxylic acids, aldehydes, ketones, amines and phenols; three lectures per week. Prerequisite: Ch 201.

Ch 203 **Organic Chemistry Laboratory I** 2 semester hours

Techniques of preparation, purification, and identification of organic compounds; one four-hour laboratory per week. Prerequisite: Ch 201 taken previously or concurrently.

Ch 204 **Organic Chemistry Laboratory II** 2 semester hours

Application of basic techniques to more complicated synthetic problems; one four-hour laboratory per week. Prerequisite: Ch 203.

Ch 210 **Analytical Chemistry I** 4 semester hours

Theory, scope, and application of gravimetric and volumetric quantitative chemical analysis; two hours of lecture and two three-hour laboratory periods per week. Prerequisites: Ch 120, 121.

Ch 211 **Analytical Chemistry II** 4 semester hours

Quantitative chemical analysis through instrumental methods: potentiometry, spectrophotometry, oxidation-reduction titrations, and electrochemistry; two hours of lecture and two three-hour laboratory periods per week. Prerequisite: Ch 210.

Ch 301 **Physical Chemistry I** 5 semester hours

First and second laws of thermodynamics; chemical, solution, and phase equilibria; electrochemistry, and chemical kinetics; three lectures and one four-hour laboratory per week. Prerequisites: Ch 210, 211, Ma 210, 211.

Ch 302 **Physical Chemistry II** 5 semester hours

Quantum chemistry, chemical bonding, molecular spectroscopy, molecular structure, foundations of statistical thermodynamics; three lectures and one four-hour laboratory per week. Prerequisite: Ch 301.

Ch 410 **Biochemistry** 4 semester hours

Chemistry and metabolism of proteins, nucleic acids, carbohydrates, and lipids; thermodynamics; enzymes; nucleic acids and protein biosynthesis; biological oxidation; and correlations in intermediary metabolism; three lectures and a three-hour laboratory per week. Prerequisites: Ch 201, 202, 301, 302, or the consent of instructor.

Ch 420 **Qualitative Organic Analysis** 3 semester hours

Analysis of organic compounds having one or two functional groups, separation of mixtures, and identification of substances by their physical properties and by the preparation of derivatives; two lectures and a four-hour laboratory per week. Prerequisites: Ch 201, 202.

Ch 430 **Advanced Inorganic Chemistry** 3 semester hours

Structure and reactions of the elements and their inorganic compounds; wave mechanics, theory of the chemical bond, spectroscopy, inorganic stereochemistry, crystal field theory, coordination chemistry, and atomic structure; three lectures per week. Prerequisites: Ch 120, 121.

Ch 440 **Foundations of Chemistry and Physics** 3 semester hours

History, philosophy, methods, and concepts of physical science, through case histories, original scientific papers, and biographies; emphasizes an understanding of science and scientists; three lectures per week. Open to science and non-science majors. Prerequisites: Ch 120, 121, Py 120, 121, or consent of instructor.

Ch 450 **Special Topics in Physical Chemistry** 3 semester hours

Survey of frontier areas of physical chemistry; informal seminar discussions interspersed with lectures by various members of the chemistry faculty; chemical kinetics, quantum theory of chemical bonding, molecular spectroscopy, group theory and symmetry properties of molecules; three lectures per week. Prerequisite: Ch 301, 302.

Ch 460 **Independent Study in Chemistry** 1-3 semester hours

For the individual student who wishes to undertake advanced work in chemistry; independent study on a problem mutually agreeable to the student and to the instructor; this course may be taken for credit for more than one semester. Prerequisite: Permission of the Department.

COMMUNICATION DISORDERS

Cd 220 **Speech Pathology** 3 semester hours

Nature and causes of organic and functional speech problems; emphasis on articulation, cerebral palsy and voice; consideration of therapeutic techniques. Prerequisite: Cd 270.

Cd 230 **Phonetics** 3 semester hours

Use of phonetic alphabet; practice in phonetic transcription; mechanics of voice production.

Cd 260 **Methods of Speech Improvement in the Classroom** 3 semester hours

Teaching techniques and materials for development of basic speech skills.

Cd 270 **Anatomy and Physiology of the Speech Mechanism** 3 semester hours

Characteristics of the speech mechanism; acoustical characteristics of sound.

Cd 300 **Language Disorders in Children** 3 semester hours

Normal speech and language development; processes enhancing or interfering with this development. Prerequisite: Cd 220.

Cd 340 **Remedial Speech** 2 semester hours

Correction of personal speech problems.

Cd 350 **Diagnostic Hearing Testing** 4 semester hours

Types of hearing loss; diagnosis and corrective practice.

Cd 360 **Speech Correction and Clinical Practicum** 4 semester hours

Supervised experience in diagnosis and treatment of speech disorders. Prerequisite: Cd 220, Cd 230.

Cd 361 **Tests and Measurements in Speech Correction** 3 semester hours

General role of diagnosis in speech and hearing therapy; specific consideration of diagnostic tests and procedures. Prerequisite: Cd 220 or Cd 350.

Cd 370 **Auditory Training and Speech Reading and Clinical Practicum** 4 semester hours

Supervised experience in techniques of teaching speech reading; use of auditory training; emphasis on use of hearing aids. Prerequisite: Cd 350.

Cd 371 **Clinical Audiology** 3 semester hours

Standard audiometric test battery used for differential diagnosis, including Bekesy, SISI, ABLB; interpretation of results, recommendations and referrals. Prerequisite: Cd 370.

Cd 372 **Advanced Clinical Audiology Practicum** 2 semester hours

Practical experience in diagnostic testing; use of college and community facilities; two two-hour laboratory periods per week. Prerequisite: Cd 371.

Cd 380 **Principles of Teaching the Handicapped** 3 semester hours

Special methods and techniques for teaching the handicapped who have speech and hearing impairments, e.g., cleft palate, deaf, cerebral palsied.

Cd 390 **Feedback Approach to Speech Pathology** 3 semester hours

Application of cybernetic principles to speech habilitation; therapy for disorders of language, articulation, voice, and rhythm. Prerequisite: Cd 270.

Cd 400 **Rhythm Problems and Allied Disorders of Speech** 3 semester hours

Major theories of stuttering and associated problems, e.g. cluttering; basic therapeutic procedures for children and adults. Prerequisite: Cd 220.

Cd 410 **Neurological Disorders of Speech** 3 semester hours

Communication difficulties associated with cerebral insult; rehabilitative procedures in speech and language. Prerequisite: Cd 220.

Cd 420 **Organization of Public School Speech Correction Programs** 3 semester hours

Objectives of speech correction programs; organizational guidelines; individual and group practice. Prerequisite: Cd 360.

COMPUTER SCIENCE

Cs 150 **Introduction to Computer Science** 3 semester hours

Basic computer operation, capabilities, application in such fields as education, and effect on modern society; familiarization with terminology and equipment; programming using the language BASIC; non-technical approach.

Cs 160 **Computer Programming With Fortran IV** 3 semester hours

Mathematical and scientific problem solving; real and integer arithmetic, input and output statements, control statements, DO-loops, basic FORMAT, subscripted variables, subprograms, subroutines, double-precision and character manipulation.

ECONOMICS

Ec 100 **Principles of Economics I** 3 semester hours

An introduction to the basic economic analysis of full employment of national resources and their efficient allocation within the American mixed-enterprise system.

Ec 101 **Principles of Economics II** 3 semester hours

An in-depth analysis of the special problems and policies of stable employment and prices, market competition and distribution of income in the United States; the economic growth of an affluent society, and trade relations with the rest of the world. Prerequisite: Ec 100.

Ec 200 **Microeconomics** 3 semester hours

An intermediate level treatment of the theory of market pricing in a private enterprise system as it affects the resource and output decision of firms and industries under various market structures and the behavior of consumers. Prerequisite: Ec 101.

Ec 201 **Macroeconomics** 3 semester hours

An intermediate analysis of the determination of the level and growth of national income and employment; special attention will be given to the problems of inflation and recession and to the national fiscal and monetary policies designed to maintain full employment and stable price levels. Prerequisite: Ec 101.

Ec 202 **Labor Economics** 3 semester hours

A study of the process of wage determination in a market economy; consideration will be given to the evolution of union organization and collective bargaining affecting wages, hours, working conditions and grievance procedures for labor. Prerequisite: Ec 101.

Ec 203 **Industrial Organization** 3 semester hours

An analysis of the problems of competition and monopoly, especially as they affect concentration of economic activity and market power in the American industrial structure; emphasis is placed upon government policy to maintain or regulate competition in the interest of public welfare. Prerequisite: Ec 101.

Ec 204 **Public Finance** 3 semester hours

The principle of public taxation, expenditure and debt policy, and their influence upon the allocation of resourses between the public and private sectors and upon the stability and growth of the national economy. Prerequisite: Ec 101.

Ec 205 **Industrial Revolutions in the Atlantic Community** 3 semester hours

A comparative study of the industrialization of various countries beginning with the first industrial revolution in England and including the industrialization of other European nations and Japan; these historic cases of industrialization will be examined in terms of modern economic development and any implication for presently underdeveloped economies. Prerequisite: Ec 101.

Ec 206 **Comparative Economic Systems** 3 semester hours

A comparative study of the theory, institutions, and problems of advanced economic systems and their historical background; particular attention given to capitalism, socialism, fascism and communism. Prerequisite: Ec 101.

Ec 207 **Monetary Economics** 3 semester hours

The historical and theoretical development of the American monetary system of commercial banks and financial intermediaries; emphasis on the role of monetary controls and policy as partial solutions to full employment, price stability, and economic growth problems. Prerequisite: Ec 101.

Ec 208 **Urban Economics** 3 semester hours

The theory and policy of the growth and development of metropolitan areas; some of the policy-related problems discussed are poverty, residential and commercial land use, and traffic congestion. Prerequisite: Ec 101.

Ec 209 **Regional Economics** 3 semester hours

A study of the process of regional growth including location of economic activity, development of an export base, and the impact of migration and national government expenditures upon a region. Prerequisite: Ec 101.

Ec 210 **Fiscal Policy** 3 semester hours

Historical treatment of the institutions and practical problems encountered in implementing government tax and expenditure policy to stabilize the American economy; some attention is devoted to recent attempts at wage-price guidelines and to improving productivity in the economy. Prerequisite: Ec 101.

Ec 211 **Economic Development** 3 semester hours

A survey of contemporary economic theories concerning less developed countries; social, cultural, and political forces shaping the development of such countries are also investigated. Prerequisite: Ec 101.

Ec 303 **Statistical Analysis** 3 semester hours

Basic tools of statistical analysis appropriate to research in the social sciences; topics include measures of central tendency, hypotheses testing, time series, index numbers, regression and correlation. Prerequisite: Ec 101.

Ec 304 **Introduction to Mathematical Economics** 3 semester hours

A survey of some basic mathematical techniques appropriate to the analysis of economic models and application of economic theory. Prerequisite: Ec 101.

Ec 305 **Econometrics** 3 semester hours

The application of statistical techniques to the varification of economics models and examination of problems. Prerequisite: Ec 101 and permission of instructor.

Ec 307 **International Trade** 3 semester hours

Theories which attempt to explain why nations trade; policies and practices related to international economics. Prerequisite: Ec 101.

Ec 400 **Contemporary American Problems** 3 semester hours

An interdisciplinary approach to current socio-economic and political problems of American society such as conflict between generations, poverty, and control of the environment; format and actual issues to be determined in accordance with the interest and resources of the participants. Prerequisite: Ec 101.

Ec 401 **Special Study in Economics** 3 semester hours

A specifically designed course for the student whose needs cannot be fully met by available offerings; actual arrangements to be made between student and staff professor; not intended for general enrollment; a limit of six semester hours can be acquired. Prerequisite: Ec 101.

Ec 500 **Seminar** 3 semester hours

A research and discussion process intended to summarize and provide some career orientation to the undergraduate preparation of the economics major at the senior class level.

ELEMENTARY EDUCATION

Ed 100 **History and Philosophy of Education** 3 semester hours

Contemporary problems of education in relation to selected ancient, medieval, and modern philosophers of education.

Ed 105 **Education and Existential Philosophy** 3 semester hours

Theistic, atheistic, and phenomenological views of existence in relation to contemporary problems of education. Prerequisite: Ed 100, or consent of instructor.

Ed 110 **Measurement and Evaluation** 3 semester hours

Study, construction, and evaluation of instruments in education; interpretation of data; criteria for selection and evaluation of behavioral objectives and standardized tests.

Ed 120 **Principles of Guidance** 3 semester hours

The role of guidance and counseling in the school and the teacher's responsibilities as a functioning member of the guidance staff. Prerequisite: Juniors and Seniors only.

Ed 130 **Education of the Gifted** 3 semester hours

The identification, characteristics and personality factors of the gifted; the teacher's role and various organizational patterns; innovative procedures and techniques to nurture creativity. Prerequisite: Ps 190 or Ps 171, 172. Junior and Senior Education majors and minors.

Ed 140 **Urban Education** 3 semester hours

Development of understanding of the social, psychological and educational problems of the culturally different; strategies and techniques for teaching in the inner-city; practicum. Prerequisite: Open to upperclassmen.

Ed 150 **Education and Race Relations** 3 semester hours

The role of education in the promotion of interracial understanding; study of Black American and American Indian — their social and intellectural contributions to the history of the U.S.; contributions of the culturally different to contemporary society.

Ed 160 **Social Action Education Practicum** 3 semester hours

Work study program provides students with an opportunity to work in different social and educational agencies under supervision. Prerequisite: Upperclassmen.

Ed 170 **Educational Psychology** 3 semester hours

Learning and developmental processes, motivation, retention, relationships of intelligence and achievement, personality, emotional aspects of learning. Prerequisite: Ps 110.

Ed 210 **Orientation to Education** 2 semester hours

Contemporary American education in a democratic society; teaching as a professional career; a practical approach to teaching.

Ed 220 **Modern Instruction: Principles and Practices** 2 semester hours

An analysis of good instruction in the elementary schools, emphasizing objectives, planning, organization, motivation, materials, media, and evaluation.

Ed 300 **Reading in the Elementary School** 3 semester hours

Intensive overview of the basic reading skills; effective teaching strategies; utilization of multi-media in reading instruction. Prerequisite to Student Teaching.

Ed 305 **Library Skills in the Elementary School** 3 semester hours

For Description of This Course See Me 305.

Ed 310 **Children's Literature** 2 semester hours

Survey of children's books; procedures fostering lasting interest in literature. Prerequisite to Student Teaching.

Ed 320 **Art in the Elementary School** 2 semester hours

The place and function of art in the elementary school; contemporary practices through laboratory experiences. Prerequisite: Consult Art Department.

Ed 330 **Music in the Elementary School** 2 semester hours

The child voice; selection and presentation of rote songs; guiding growth in rhythmic, notational and listening experiences; survey of music books and materials. Prerequisite: Mu 110.

Ed 340 **Mathematics in the Elementary School** 2 semester hours

Techniques for teaching arithmetic in the modern elementary school. Emphasis on material development and classroom evaluation of both materials and techniques. Prerequisite to Student Teaching.

Ed 350 **Language Arts for Primary Grades** 3 semester hours

The inter-relatedness of the language arts; functional ways of working with young children; creative development of critical thinking; exploration of new media.

Ed 355 **Language Arts in the Elementary School** 2 semester hours

The functional and creative aspects of oral and written expression; development of language power in relation to child growth.

Ed 360 **Methods and Materials in Social Studies and Science** 3 semester hours

Development of concepts, attitudes, values, skills in young children; objectives, curriculum, materials, current practices, trends in teaching social studies and science. Prerequisite to Student Teaching (Primary Level).

Ed 365 **Social Studies in the Elementary School** 2 semester hours

The aims, methods, and materials involved in teaching Social Studies with emphasis on the unit and inquiry approaches, media, and evaluation. Prerequisite to Student Teaching.

Ed 370 **Science in the Elementary School** 2 semester hours

Description of science in the elementary school; objectives, curriculum, materials, current practices, trends in science teaching. Prerequisite to Student Teaching.

Ed 375 **Practicum — New Elementary Science Curricula** 3 semester hours

Seminar-workshop and team field experience in local schools. Prerequisite: Open to Junior and Senior Elementary Education majors.

Ed 400 **Diagnostic and Remedial Techniques in Reading for the Regular Classroom** 3 semester hours

Evaluation instruments and procedures; techniques for removing deficits; tutoring a disabled reader(s); writing a case report. Prerequisites: Ed 300, and 500.

Ed 405 **Current Trends in the Teaching of Reading (Elective)** 3 semester hours

Review of innovations; assessment of latest instructional materials; overview of research and current implementation of significant changes in modern reading instruction. Prerequisites: Ed 300, and 500.

Ed 410 **The Slow Learner in the Elementary School** 3 semester hours

Diagnostic and remedial measures studied, analyzed, and applied to the slow learner (IQ 70 to 90) in the elementary school; curriculum content and innovative methodology in the light of current psychological findings. Prerequisite: Student Teaching in the Elementary School.

Ed 415 **Orientation to Special Education for Children with Learning Disabilities** 3 semester hours

Overview of the history and development of special education for children with learning disabilities and their personality characteristics and needs.

Ed 425 **The Nature and Needs of Children with Learning Disabilities** 3 semester hours

Children who differ physically, mentally, emotionally,and socially from the average;practical methods for diagnosis and differentiation; learning disabilities from a psycho-educational point of view. Prerequisites: Ps 190, Ed 170.

Ed 430 **Educating Exceptional Children in the Classroom** 3 semester hours

Discrepancies in each area of deviation; organization of an instructional program which conforms with pupil's abilities and inabilities. Prerequisite: Ed 500.

Ed 435 **Theoretical and Practical Foundations of the Open Classroom** 3 semester hours

Theoretical and practical aspects of the open classroom. Prerequisite: Tutoring or teaching experience (Ed 500).

Ed 445 **Learning Disabilities: Diagnosis** 3 semester hours

Factors which contribute to learning disabilities; child study techniques; utilization of diagnostic tests; the use of special group and individual tests of perceptual, motor, and conceptual functioning; interpretation of the data as applicable to remediation. Prerequisites: Ps 190, Ed 170, Ed 210, Ed 220.

Ed 450 **An Introduction to Linguistics for Elementary Teachers** 3 semester hours

A background in linguistics; history and structure of the language; use of current texts with linguistic approaches to language.

Ed 455 **Problems of Instruction in Elementary School Science** 3 semester hours

Analysis of current practices; identification of problems; adaptation of available materials; resources consistent with existing science curricula. Prerequisites: Ed 360 or 370, and Ed 500, or permission of instructor.

Ed 465 **Learning Disabilities: Remediation** 3 semester hours

Prescriptive teaching and the individualization of instruction in reading, arithmetic and other subject areas; methods, materials and techniques for implementing change and remediation with children; visual, auditory, tactile, fine and gross motor problems in relation to academic achievement. Prerequisite: Ed 445.

Ed 470 **Curriculum for Nursery School and Kindergarten** 3 semester hours

Program planning for the nursery school and kindergarten; role of the pre-school in the total education program; socio-emotional program; teaching techniques in all curricular areas.

Ed 475 **Seminar in Learning Disabilities** 3 semester hours

In-depth study of basic principles and procedures for working with children with learning disabilities; teacher-pupil interactions in educational settings. Prerequisites: Ps 190, Ed 170, Ed 425, Ed 445, Ed 465.

Ed 500 **Student Teaching in the Elementary School** 12 semester hours

Actual teaching in schools of Worcester and vicinity; principles, techniques and responsibility for planning, executing, and evaluating teaching-learning. Prerequisite: Completion of required Education Courses.

ENGLISH

En 101 **English Composition** — 3 semester hours

Review of English mechanics and writing principles; emphasis will be placed on writing; rhetorical analysis of selected readings; instruction in the techniques of research and in the writing of a research paper. Required of all Freshmen.

En 110 **Survey of American Literature I** — 3 semester hours

American Literature up to the Civil War; Colonial and Federal Periods and Transcendentalists.

En 111 **Survey of American Literature II** — 3 semester hours

American Literature after the Civil War; Romanticism, Naturalism, and Realism.

En 120 **Survey of English Literature I** — 3 semester hours

The development of English literature from the beginnings to the year 1798. Required of all English majors.

En 121 **Survey of English Literature II** — 3 semester hours

The development of English literature from the year 1798 to the present. Required of all English majors.

En 140 **Introduction to Poetry** — 3 semester hours

The technical aspects of poetry, such as figures of speech, meter, rhyme, imagery, and the symbol; types of poetry, including the sonnet, the pastoral, the mock-heroic, and the ode; examples range from the Elizabethans to the moderns; short writing assignments required.

En 210 **Advanced Composition** — 3 semester hours

Thorough discussion of the traditional descriptive grammar; assigned reading in the more recent structural and generative linguistic systems; series of short written themes on types of literature and a major paper discussing some aspect of language or literature. Prerequisite: Consent of instructor.

En 230 **The American Novel I** — 3 semester hours

The American novel from its origin to 1890; Brown, Cooper, Melville, Hawthorne, and others. Prerequisite: Completion of Freshman year.

En 232 **The American Novel II** — 3 semester hours

The American novel from 1890 to World War II; Crane, Wolfe, Dreiser, Anderson, Hemingway, Steinbeck, and others. Prerequisite: Completion of Freshman year.

En 250 **Chaucer** — 3 semester hours

A study of the development of Chaucer's versatile art and of his writings as expressive of the later Middle Ages; includes *The Canterbury Tales, The Book of the Duchess, The House of Fame, The Parliament of Fowls,* and *Troilus and*nd *Cressida;* reading of Chaucerian English will be stressed (recordings used).

En 260 **Classics I: Ancient** — 3 semester hours

Greek and Roman masterpieces in translation, including Homer, Greek tragedy, Plato, and Vergil, as well as selections from the Bible.

En 270 **Classics II: Renaissance through Modern** 3 semester hours

World masterpieces of the Renaissance through the modern period, with emphasis on continental works in translation.

En 280 **Contemporary Literature** 3 semester hours

Major literary trends of the twentieth century.

En 290 **Creative Writing: Prose I** 3 semester hours

An attempt to develop the student's writing ability and critical sense; work of the students and of authors of established reputation will be read, analyzed, and discussed; laboratory method used as needed. Prerequisite: Consent of instructor.

En 292 **Creative Writing: Prose II** 3 semester hours

A continuation of En 290; offers instruction in composing various types of prose fiction. Prerequisite: Consent of instructor.

En 300 **Form and Idea in Drama: The Major Genres** 3 semester hours

The theories and development of tragedy, comedy, and tragic-comedy; drama from Sophocles to Eugene O'Neill as illustrations of these and the related genres of melodrama and farce. Prerequisite: Completion of Freshman year.

En 310 **Modern Drama** 3 semester hours

The theories and development of classicism, realism, naturalism, expressionism, folk drama, Brecht's epic theatre of alienation, theatre of the absurd, and Artaud's total theatre of cruelty; representative plays from Aeschylus to Albee for reading and analysis. Prerequisite: Completion of the Freshman year.

En 320 **Early American Literature** 3 semester hours

Organized according to literary genres: non-fiction, poetry, fiction, drama, and literary criticism from the colonial beginnings to Washington Irving. Prerequisite: En 110.

En 330 **The Age of Johnson** 3 semester hours

Johnson and Boswell are the central figures; also Goldsmith, Burke, Sheridan, Gibbon, Reynolds, and others of the second half of eighteenth century England. Prerequisite: En 120.

En 332 **The English Novel of the Eighteenth Century** 3 semester hours

Purpose, range, and developments in the novel of the eighteenth century; Defoe, Richardson, Fielding, Smollett, Sterne, and others. Prerequisite: Completion of the Freshman year.

En 336 **The Age of Pope and Swift** 3 semester hours

English literature of the early eighteenth century in terms of its social, religious, and philosophical milieu; the nature of neo-classicism, the strategies of Augustan satire, and the emergence of the novel. Prerequisite: En 120.

En 338 **The English Theatre: 1660-1780** 3 semester hours

A survey of plays of the Restoration period and the eighteenth century; genres of comedy and tragedy with some consideration to politics, manners, and society. Prerequisite: Completion of Freshman year.

En 340 **The History of the English Language** 3 semester hours

A study of the following: 1. Indo-European languages — the origins of English; 2. Old English — reading, phonology, syntax; 3. Middle English — reading, syntactic change, dialect variations; 4. Modern English — lexicography and grammar; ef-

fects of mass media on arrestation and change.

En 350 **Medieval English Literature** 3 semester hours

English literature from the twelfth to the fifteenth centuries with a focus on lyric poetry, ballads, the mystery and morality plays, *Piers Plowman*, and the work of the Pearl Poet and Sir Thomas Malory. Prerequisite: En 120.

En 360 **Major Russian Authors** 3 semester hours

A critical analysis of the principal writings of the Russian masters of drama, fiction, and poetry; emphasis on the works of Tolstoy, Dostoyevsky, Chekov, Gogol, Pushkin, and Turgenev; attention given to the cultural and historical milieu in which these works were produced.

En 380 **Mythology** 3 semester hours

Myths and legends of ancient Greece and Rome which form a part of the classical tradition in English literature; intensive reading of *The Theogony*, *The Iliad*, *The Odyssey*, *The Aeneid*, and selections from *Metamorphoses*.

En 390 **The Novelette** 3 semester hours

The major practitioners of the novelette over the past century: Conrad, Mann, Kafka, Dostoyevsky, and others.

En 400 **The Renaissance** 3 semester hours

A study of the chief non-dramatic literature of Tudor England; emphasis on the writings of More, Wyatt, Sidney, and Spenser, and on the earlier work of Shakespeare, Donne, and Bacon. Prerequisite: En 120.

En 410 **Romantic Literature** 3 semester hours

Poetry and prose with special emphasis on the poetry of Wordsworth, Coleridge, Shelley, Byron, and Keats; attention to modern critical views as well as contemporary attitudes. Prerequisites: En 120 and 121.

En 412 **The English Novel of the Nineteenth Century** 3 semester hours

Representative nineteenth century novelists: Austen, Bronte, Dickens, Thackeray, Eliot, Hardy, Conrad, and others. Prerequisite: Completion of the Freshman year.

En 420 **Continental Novelists I** 3 semester hours

Major nineteenth century European novelists: Stendahl, Balzac, Tolstoy, Flaubert, Hugo, Hoffman, Dostoyevsky, and others. Prerequisite: Completion of Freshman year.

En 422 **Continental Novelists II** 3 semester hours

Major twentieth century European novelists: Mann, Kafka, Remarque, Gide, Proust, Camus, Sartre, and others. Prerequisite: Completion of Freshman year.

En 440 **Seventeenth Century Literature** 3 semester hours

Prose and poetry of this era with special attention to the major works of Jonson and Donne. Prerequisite: Completion of Freshman year.

En 450 **Shakespeare** 3 semester hours

Representative plays, as well as the life and times of Shakespear. Required of all English majors. Prerequisite: Completion of Freshman year.

En 460 **The Short Story** 3 semester hours

The short story form from its origins in the medieval tale to modern short stories which are psychological probings of

character; attention to changes in structure and to Poe's theory of the short story; selections from Conrad, Mansfield, Joyce, and others.

En 470 **Victorian Essayists** 3 semester hours

Analysis of the essays of Macauley, Carlyle, Newman, Darwin, Huxley, Mill, Arnold, Ruskin, Pater, and Stevenson; consideration of the classical principles of rhetoric, as well as the innovation in ideals, political principles, religious conceptions, scientific theories, and cultural changes recorded in these essays as they illuminate both the Victorian and the modern world. Prerequisite: Completion of Freshman year.

En 480 **Victorian Poetry** 3 semester hours

Emphasis on Tennyson, Browning, Arnold, and Swinburne as thinkers and stylists; readings in Rossetti, Hopkins, Housman, Hardy, and others; special attention to the development of the modern mind and its struggle with Romanticism. Prerequisite: Completion of Freshman year.

En 490 **Milton** 3 semester hours

A study of Milton's work from early poems to *Paradise Lost, Paridise Regained,* and *Samson Agonistes;* includes some prose pamphlets. Prerequisite: Completion of Freshman year.

En 500 **Contemporary Poetry I** 3 semester hours

Close analysis of the development of British and American poetry from the late nineteenth century to World War II. Prerequisites: En 120 and 121.

En 502 **Contemporary Poetry II** 3 semester hours

Concentrates on poets whose major work has occurred after World War II; special attention to poets presently writing and publishing.

En 510 **Contemporary Novel** 3 semester hours

American and English novels of the past thirty years, with emphasis on living novelists; selections representing a wide variety of themes and styles. Prerequisite: Completion of Freshman year.

En 520 **Contemporary Drama** 3 semester hours

A survey of the more significant plays of the contemporary theatre; concentration on the dramatic works and theories of Albee, Artaud, Beckett, Brook, Genet, Grotowski, Ionesco, Miller, Williams, and Pinter. Prerequisite: Completion of Freshman year.

En 522 **Hemingway and O'Neill** 3 semester hours

Seminar devoted to Hemingway's short stories and novels and representative plays of O'Neill. Prerequisite: En 121.

En 530 **Afro-American Literature** 3 semester hours

Black literature considered chronologically in the total context of American culture; analysis of Black poetry, drama and fiction; contemporary non-fictional writing of the Black community considered as an expression of the dynamic social changes occurring in that community. Prerequisite: One literature course.

En 540 **Literary Criticism** 3 semester hours

An historical introduction to speculation concerning the nature and function of literature; selections from Aristotle to Frye. Prerequisites: En 120 and 121.

En 550 **Medieval Comparative Literature** 3 semester hours

Ideas of medieval Christianity, courtly love, and chivalric honor as they appear in *The Song of Roland*, Arthurian romances, the Grail legend, the story of Tristan and Iseult, *The Romance of the Rose*, Troubador lyrics, and Dante's *Divine Comedy*.

En 560 **The Irish Literary Revival** 3 semester hours

The works and writers of the Irish Renaissance; an examination of the origins of the movement as well as the writings of Joyce, Yeats, Synge, O'Casey, Lady Gregory, and others. Prerequisites: En 121, 120.

En 570 **Creative Writing: Poetry I** 3 semester hours

Developing the student's skill in the creation of poetry; attention to contemporary trends in American poetry along with discussion of the major poets of the recent past. Prerequisite: Consent of instructor.

En 572 **Creative Writing: Poetry II** 3 semester hours

Conversation with practicing poets; preparation of a small booklet of poems; En 570 not required. Prerequisite: Consent of instructor.

En 580 **Jacobean Drama** 3 semester hours

A study of plays by the contemporaries of Shakespeare: Beaumont, Chapman, Fletcher, Ford, Jonson, Massinger, and Webster. Prerequisite: En 450.

En 590 **Introduction to Journalism** 3 semester hours

The theory and practice of proper journalistic standards, principles, and techniques. Prerequisite: Consent of instructor.

En 600 **Independent Study in English** 1-3 semester hours

A course-concept enabling the individual student to pursue independent study when it is deemed suitable by the Department and when appropriate instructor is available. Prerequisite: Consent of department and instructor.

En 644 **Literature and Social Change** 3 semester hours

Examines the role of literature in society as a means of protesting social abuses and effecting social change; works in various genres, periods, and traditions by such writers as Swift, Blake, Shaw, Camus, Brecht, and Steinbeck studied in terms of the author's social concern and impact; an attempt to measure the actual effect on society of at least one writer's work.

En 646 **The Existential Adventure: Literature of Self Discovery** 3 semester hours

Analysis of several literary works which deal with the experience of self-discovery and what various authors have tried thereby to say about the nature of the self; Conrad, Hesse, Dostoyevsky, Hemingway and others; includes, unless otherwise indicated, the practice of the Eastern discipline for achieving self-discovery, Yoga.

En 648 **The Literature of the Bible** 3 semester hours

Biblical writings in the light of the time and events which produced them; the Old Testament, the Founding of the Monarchy, the Yahwist Account, the Prophets of the ninth century, Wisdom Literature, the Apocalyptical Literature in the New Testament.

En 650 **English Humorists of the Nineteenth Century** 3 semester hours

Form and function of English humor and wit in the nineteenth century; the Regency wits, Byron, Lamb, Dickens,

Thackeray, Carroll, Wilde, Gilbert and Sullivan, Shaw, and others.

En 652 **Science Fiction** 3 semester hours

The nature and function of nineteenth and twentieth century science fiction literature; H.G. Wells, Jules Verne, Isaac Asimov, Ray Bradbury, and others.

En 654 **Structure of Modern English** 3 semester hours

An introduction to traditional and linguistic description of modern English.

FRENCH

Fr 101 102 **Beginning French I, II** 6 semester hours

Fundamentals of pronunciation, patterns of speech, basic structure by aural-oral method; continued second semester, readings in literature and culture; language laboratory.

Fr 110 111 **Intermediate French I, II** 6 semester hours

Review of grammar, verb structure, written, oral drills; selected readings; language laboratory. Prerequisites: Fr 101, 102, or 2 years high school French.

Fr 112 113 **Intermediate French I, II** 6 semester hours

Review of grammar, pronunciation, composition; selected readings; language laboratory. Prerequisites: Fr 101, 102, or 2 years or more high school French. Majors only.

Fr 114 115 **Intermediate French I, II: Readings and Translation** 6 semester hours

Alternative intermediate course; recognition of basic forms and structure; acquisition of practical vocabulary. Prerequisites: Fr 101, 102, or 2 years high school French.

Fr 116 117 **Intermediate French I, II: Conversation** 6 semester hours

Conversational patterns, idioms, dialogues; special vocabularies for travel and occupations; language laboratory. Prerequisites: Fr 101, 102, or 2 years high school French.

Fr 201 202 **Readings in French Literature I, II** 6 semester hours

Selected readings of masterpieces from Middle Ages to present; thought content and reading skills. Prerequisite: Any Fr 110-117.

Fr 210 211 **Survey of French Literature I, II** 6 semester hours

General view from Middle Ages to 1850's; reading in major genres in light of historical, social background, oral, written reports; required of French majors. Prerequisites: Any Fr 110-117.

Fr 230 **Advanced French Composition I** 3 semester hours

Review of more difficult points of French grammar; advanced work in idioms; stylistic analysis of selected exercises in literary extracts; required of French majors. Prerequisites: Any Fr 110-117.

Fr 231 **Advanced French Composition II** 3 semester hours

Mastery of complex grammatical problems; strengthen fluency in expository writing. Prerequisite: Fr 230.

Fr 240 **Conversational French I** 3 semester hours

Complete review of pronunciation for fluency and accuracy; intonation patterns, practical approach to spoken idiom; language laboratory; required of French majors. Prerequisites: Any Fr 110-117.

Fr 241 **Conversational French II** 3 semester hours

Facility, naturalness through advanced oral drill and practical exercises; increasing speed and complexity of speech patterns; language laboratory. Prerequisite: Fr 240.

Fr 250 **Introduction to French Phonetics** 3 semester hours

Practice in French sound system; language laboratory; required of French majors. Prerequisites: Any Fr 110-117.

Fr 260 **General French Civilization** 3 semester hours

Characterisitc aspects of French culture; significant elements of history, geography, social, economic development as essential background to literature and language; required of French majors. Prerequisites: Any Fr 110-117.

Fr 300 **Seventeenth Century French Drama** 3 semester hours

Intensive reading, analysis of major works of Corneille, Moliere, Racine; offered Spring, odd numbered years. Prerequisites: Fr 210, 211.

Fr 310 **Eighteenth Century French Literature** 3 semester hours

French Enlightenment in major works of Montesquieu, Voltaire, Diderot, Rousseau; plus a representative work in novel and theatre; offered Spring, odd numbered years. Prerequisites: Fr 210, 211.

Fr 320 **Modern French Drama** 3 semester hours

Main currents in French drama through analysis of works of principal dramatics. Prerequisites: Fr 210, 211.

Fr 340 **Contemporary French Civilization** 3 semester hours

Political, social life since 1958; seminar approach; required of French majors. Prerequisite: Fr 260.

Fr 350 **Nineteenth Century French Literature** 3 semester hours

Major movements through principal authors and works; offered Spring, even numbered years. Prerequisites: Fr 210, 211.

Fr 360 **Twentieth Century French Literature** 3 semester hours

Survey of principal writers, movements from 1900 to present; emphasis on poetry, novel. Prerequisites: Fr 210, 211.

Fr 370 **Introduction to French Poetry** 3 semester hours

Essentials of versification, poetic theory, significant poetic works of various forms; emphasis on form and technique; recommended for literary specialty. Prerequisite: Good reading knowledge of French.

Fr 380 **French Stylistics** 3 semester hours

Workshop approach to problems of idiom, syntax, style, usage at advanced level; practice in literary translation from English; recommended for language-study majors. Prerequisites: Fr 230, 231.

Fr 400 **Advanced Study: Special Topics** 3 semester hours

Special topics in foreign language, literature, civilization, or field work of mutual interest to student and instructor; of-

fered when warranted. Prerequisite: Departmental recommendation.

In 450 **Foreign Language Intra-Departmental Seminar**

For course description see Inter/Intra Departmental course listings.

GEOGRAPHY-GEOLOGY

Ge 101 **Principles of Physical Geography** 3 semester hours

Geographic principles of location; characteristics of landforms, soil, climate, minerals, water, flora and fauna.

Ge 102 **Principles of Cultural Geography** 3 semester hours

Man-land relationships; settlement patterns, problems related to urbanization, pollution, conservation and patterns of change.

Ge 110 **Regional Geography — Western Hemisphere** 3 semester hours

Regional treatment of the political and cultural characteristics of the Anglo-American and Latin American realm as they relate to the natural environment. Prerequisites: Ge 101, 102.

Ge 111 **Regional Geography — Eastern Hemisphere** 3 semester hours

Analysis of the physical, cultural and economic regions of Asia, Europe, Africa, and Oceania; present day social and political problems. Prerequisites: Ge 101, 102.

Ge 210 **Geography of North America** 3 semester hours

Techniques of regional analysis; types of manufacturing, agriculture and trade in the various regions of the continent; types of land use as affected by the physical environment. Prerequisites: Ge 101, 102.

Ge 220 **Geology I** 3 semester hours

Introduction to geological science; earth materials, structures, and the processes of erosion. Two lectures and a two-hour laboratory per week.

Ge 221 **Geology II** 3 semester hours

Evolution of the earth's crust, surface features, and life forms through geologic time; emphasis on methods of study; two lectures and a two-hour laboratory per week. Prerequisite: Ge 220.

Ge 240 **Geography of Africa** 3 semester hours

Newly emerged nations, — older advanced states — problems of cultures, and economics. Prerequisites: Ge 101, 102.

Ge 250 **Hydrology** 3 semester hours

Physical aspects of water flow; hydrologic cycle; economic, political and social problems in water resource planning; water polution and quality control. Prerequisite: Ge 101.

Ge 260 **Geography of South America** 3 semester hours

Physical, economic, social and cultural analysis of the individual countries; historical background to present-day development. Prerequisites: Ge 101, 102.

Ge 270 **Geography of Middle America** 3 semester hours

Present growth and trends in Mexico, Central America and the Caribbean realm as related to the nature of the landscape and cultural characteristics of its people. Prerequisites: Ge 101, 102.

Ge 280 **Geography of the U.S.S.R.** 3 semester hours

Physical environment, differentiations due to regional economics, populations, cultures; problems of a giant in a tripartite power play. Prerequisites: Ge 101, 102.

Ge 290 **Conservation and Natural Resource Management** 3 semester hours

Problems in resource management; attempt at seeking optimal solutions to problems within the existing framework of physical, social, and economic constraints.

Ge 310 **Geomorphology** 3 semester hours

The earth's surface forms and the processes which produce them. Prerequisite: Ge 220.

Ge 315 **Meteorology** 3 semester hours

Weather elements, frontal storms, air mass characteristics, wind movement, temperature, percipitation, and pressure patterns throughout the world; weather instruments; forecasting. Prerequisite: Ge 101.

Ge 320 **Climatology** 3 semester hours

Characteristics of the atmosphere; climates of the continents and classification of the world's climates. Prerequisite: Ge 101.

Ge 330 **Geography of Asia** 3 semester hours

Physical and cultural environmental analysis; rapid changes, developments of recent origin, and problems facing the individual countries. Prerequisites: Ge 101, 102.

Ge 340 **Geography of Europe** 3 semester hours

European landscapes, peoples, cultures, economics, problems of selected areas, attempts at unity. Prerequisites: Ge 101, 102.

Ge 350 **Cartography and Geographic Techniques I** 3 semester hours

Theory and construction of maps. Prerequisites: Ge 101, 102.

Ge 360 **Cartography and Geographic Techniques II** 3 semester hours

Use of diagrams, charts and maps, and statistical analysis; field observations, planetabling, aerial photographic interpretation and original mapping. Prerequisites: Ge 101, 102, 350.

Ge 370 **Geography of Manufacturing** 3 semester hours

A systematic study of the spatial distribution of manufacturing activities; analysis of their locations employing industrial location theory. Prerequisites: Ge 420, 102.

Ge 410 **Political Geography** 3 semester hours

Space structures, growth, problems of a nation-state, – modern world political problems, – studies of a few selected areas. Prerequisites: Ge 101, 102.

Ge 420 **Economic Geography** 3 semester hours

Geographic factors contributing to the localization of economic activities; distribution, production, and trade.

Ge 430 **Urban Geography** 3 semester hours

Geographic aspects of origin, growth and development of cities and urbanized areas; factors influencing the location of cities and central places; internal structure, functions, problems and urban planning.

Ge 450 **Readings and Directed Research** 3 semester hours

Directed study on selected topics. Open to Senior majors. Prerequisites: Ge 101, 102, 210, 351, 352, and consent of the Department.

GERMAN

Gn 101 102 **Beginning German I, II** 6 semester hours

The German language — its fundamentals of structure, speech patterns, pronunciation, writing, reading; laboratory work.

Gn 110 111 **Intermediate German I, II** 6 semester hours

Fundamentals of the German language and presentation of more complex, stylistic features; selected readings as introduction to culture, conversation, composition. Prerequisites: Gn 102, or 2 years High School German.

Gn 120 **German Literature in Translation: Prose of Mann, Kafka, Hesse** 3 semester hours

Works by authors who have touched upon problems that are disturbingly similar to those of our day; contributions of Musil, Doblin; others are also considered. Prerequisite: Completion of Freshman year.

Gn 125 **German Literature in Translation: The Problems of Identity and Responsibility** 3 semester hours

Various types of response to cataclysms of our century; post WW II authors: Grass, Boll, Frisch, et al; offered Spring, 1973. Prerequisite: Completion of Freshman year.

Gn 201 202 **Intermediate Scientific German I, II** 6 semester hours

Basic grammar, structure of language; introduction to scientific terminology vocabulary; translation, writings of resumes stressed. Prerequisites: Gn 102, or 2 years High School German.

Gn 210 211 **Readings in German Literature I, II** 6 semester hours

Selected readings from major periods of German literature. Prerequisites: Gn 110, 111, 201, 202.

Gn 220 **German Conversation — Composition** 3 semester hours

Student's ability to communicate via written, spoken word stressed; facilitates transition to advanced level courses. Prerequisites: Gn 110, 111.

Gn 230 **General Survey of German Literature** 3 semester hours

Various periods, movements in German Literature; representative works of particular era to complement lectures. Prerequisite: Gn 220.

Gn 240 **Survey of German Drama** 3 semester hours

Selected readings from Lessing through Brecht; emphasis on Goethe, Schiller, Kleist, Hebbel, Grillparzer, Hauptmann, Brecht. Prerequisite: Gn 230.

Gn 250 **German Prose Fiction** 3 semester hours

Selected readings from Storm, Stress to present time; emphasis on development of novel, 'novelle'; offered Spring, 1973. Prerequisite: Gn 230.

Gn 400 **Advanced Study: Special Topics** 3 semester hours

Special topics in foreign language, literature, civilization, or field work of mutual interest to student and instructor; offered when warranted. Prerequisite: Departmental Recommendation.

In 450 **Foreign Language Intra-Departmental Seminar**

For course description see Inter/Intra Departmental course listings.

HEALTH EDUCATION

He 330 **Health Education in the Elementary School** 3 semester hours

The nature and scope of present-day Health Education; examines content of a basic elementary health curriculum, and methods by which this material may effectively be presented; teaching aids and resource materials also examined.

He 335 **Current Issues in Health Education** 3 semester hours

Impact of modern-day life on human health; the potential of heart disease, drugs, nutrition, diet and weight control, smoking, daily stress, and how they contribute to or detract from the individual's optimal level of health.

He 400 **Human Sexuality and Family Life Education** 3 semester hours

Physiological, psychological, sociological, philosophical, and historical background of sexuality and family life; techniques and methods for teaching this subject area in the elementary schoolroom emphasized. Prerequisite: Junior and Senior elementary majors only.

He 410 **Drugs and Health** 3 semester hours

The effects of drug use, abuse, and misuse; major drugs of the contemporary drug scene given special attention; the possible reasons for drug use and the role of the law in drug abuse examined; open classroom method of instruction used.

He 420 **Health and Nutrition** 3 semester hours

Information regarding basic nutritional requirements and how they contribute to maintenance of good health; study of obesity-diet-excercise, heart disease and diet, health foods and quackery.

HISTORY

Hi 101
102

History of Western Civilization

6 semester hours

Important developments in the history of European civilization, from Greece to World War II. History majors must elect Hi 103 and 104.

Hi 103
104

History of Western Civilization

6 semester hours

Deals with same material as Hi 101 and 102 but adds an introduction to the study and writing of history. Designed for history majors.

Hi 111
112

United States History

6 semester hours

From colonization to the New Deal; political, social, economic, diplomatic and cultural movements. Prerequisite for Hi 112 is Hi 111.

Hi 200
201

Colonial History

6 semester hours

European background and reasons for American colonization, intercolonial rivalries, and British colonial policy. Prerequisites: Hi 111, 112.

Hi 202

Early National Period of the U.S. – 1783-1829

3 semester hours

The war for independence, the confederation, the Federalist and Jeffersonian regimes and the rise of American nationality. Prerequisites: Hi 111, 112.

Hi 203

The Age of Jackson

3 semester hours

Political, social, economic and intellectual developments from 1820-1848. Prerequisites: Hi 111, 112.

Hi 204

The Civil War and Reconstruction

3 semester hours

Sectionalism, slavery and modern industrial warfare and their impact on the political and racial fabric of America. Prerequisites: Hi 111, 112.

Hi 206

Populism and Progressivism – 1877-1914

3 semester hours

America's transition from a developing nation to a world power; immigration, urbanization, industrialization; development of economic and social life. Prerequisites: Hi 111, 112.

Hi 207

American Urban History

3 semester hours

The process of urbanization since the 19th century; cultural, social, economic and political aspects of city life. Prerequisites: Hi 111, 112.

Hi 208

The Immigrant in American History

3 semester hours

The process of immigration, the impact of the immigrant on American life and its effect on him. Prerequisites: Hi 111, 112.

Hi 209

Afro-American History

3 semester hours

The Black man in American society from slavery to the present; contributions to American life. Prerequisites: Hi 111, 112.

Hi 210 **U. S. Constitutional History** 3 semester hours

Major issues and principles ot American constitutional history that have made the constitution a vital force in the development of the nation. Prerequisites: Hi 111, 112.

Hi 211
212 **History of U.S. Foreign Policy** 6 semester hours

Determination and implementation of U.S. foreign policy through detailed historical analysis of significant themes and basic concepts. Prerequisites: Hi 111, 112.

Hi 213 **Twentieth Century U. S. History** 3 semester hours

Contemporary American civilization, from America in World War I up to America in the Cold War. Prerequisites: 111, 112.

Hi 214 **U. S. Labor History – 1864 to the Present** 3 semester hours

Survey of labor in the U.S.; analysis of the labor force; ideologies which competed for adherents among the labor population; labor's role in shaping America. Prerequisites: Hi 111, 112.

Hi 215 **American Intellectual History** 3 semester hours

Puritanism, the Enlightenment, Romanticism, Darwinism, Pragmatism, Naturalism, Fundamentalism, the Liberal-Progressive Ethic, and the New Left. Prerequisites: Hi 111, 112.

Hi 216 **Economic History of the U. S.** 3 semester hours

American economic history from the 17th century to the present; economic problems and policies particularly since World War II. Prerequisites: Hi 111, 112.

Hi 220 **Ancient History** 3 semester hours

Intensive study of Egypt, the age of Pericles, Alexander and Augustus; industry, government, art, literature and society of each period. Prerequisites: Hi 101, 102, or Hi 103, 104.

Hi 221 **Renaissance and Reformation** 3 semester hours

A factual survey of Europe from the middle of the 13th to the middle of the 16th century. Prerequisites: Hi 101, 102, or Hi 103, 104.

Hi 222 **The Age of Louis XIV and the Ancien Regime** 3 semester hours

17th and 18th century France down to the French Revolution; Divine Right, domestic and foreign policies of Louis XIV; subsequent decline of France. Prerequisite: Juniors and Seniors, or consent of instructor.

Hi 223 **History of Modern France** 3 semester hours

From the Revolution to the Fifth Republic; changes in French institutions due to social, economic and political forces. Prerequisite: Juniors and Seniors, or consent of instructor.

Hi 224
225 **English History I, II** 6 semester hours

Development of England's political structure; growth of the party system, evolution of the cabinet, development of English society. Prerequisite: Prior written consent of instructor.

Hi 226 **History of Modern Germany** 3 semester hours

Effects of the Napoleonic Reorganization of the Holy Roman Empire; origins of modern Germany; the Empire, the

Weimar Republic, Hitler's Third Reich; analysis of the two Germanies. Prerequisites: Hi 101, 102, or Hi 103, 104.

Hi 227 **Europe in the 19th Century** 3 semester hours

Dictatorship of Napoleon and his reorganization of Europe; liberalism and nationalism; second French Empire; unification of Italy and Germany. Prerequisites: Hi 101, 102, or Hi 103, 104.

Hi 228 **History of Europe since 1914** 3 semester hours

Political developments and institutional changes from 1914 to the present; the heritage of the 19th century transmuted to an indefinite future. Prerequisites: Hi 101, 102, or Hi 103, 104.

Hi 229 **History of Modern East Central Europe** 3 semester hours

Political developments in East Central Europe from the partition of Poland to World War I; the Balkans under Ottoman rule; Russia's influence on historic events in the region. Prerequisites: Hi 101, 102, or Hi 103, 104.

Hi 230 **Diplomatic History of Modern Europe** 3 semester hours

Causes of World Wars I and II; international relations of the great powers; the alliance system, collective secutiry, totalitarianism, economic depression and technology. Prerequisites: Hi 101, 102, or Hi 103, 104.

Hi 231 **European Intellectual History** 3 semester hours

The main theoretical works, philosophic, psychological and scientific, from Plato to the Enlightenment. Prerequisites: Hi 101, 102, or Hi 103, 104.

Hi 233 **History of Latin America** 3 semester hours

Survey of Latin American history stressing the evolution of cultural and political patterns which define Latin American societies. Prerequisites: One year college level history, or consent of instructor.

Hi 234 235 **Russian History I, II** 6 semester hours

Major political, intellectual and social currents of Russian history from Kievan times to the present; Russian Marxism, Leninism, Stalinism, and Russia and the Cold War. Prerequisites: Hi 101, 102, or Hi 103, 104.

Hi 236 237 **Modern Far Eastern History I, II** 6 semester hours

The great civilizations of China and Japan, as well as Korea and Southeast Asia; the complex problems of the Far East and of American policy there. Prerequisites: Hi 101, 102, or Hi 103, 104.

Hi 238 **History of European Political Philosophy I** 3 semester hours

An analysis of theoretic origins in classical Greece; intensive study of major political thinkers from Machiavelli to Rousseau. Prerequisites: Juniors and Seniors, or consent of instructor.

Hi 239 **History of European Political Philosophy II** 3 semester hours

Political thought of the Enlightenment and revolutionary era; the utilitarian, nationalist and socialist schools; fascism, communism and liberalism. Prerequisites: Juniors and Seniors, or consent of instructor.

Hi 240 **Comparative Imperialism** 3 semester hours

Developments in, and differences between, the British and French Overseas Empires, from the late 18th century to the present. Prerequisites: Hi 102, or consent of instructor.

Hi 250 **The Image of Women in Western History: Appearance and Reality** 3 semester hours

An exploration of the various views of women at selected stages in Western History in selected countries; both appearance and reality. Prerequisites: Hi 111, 112, or Hi 101, 102; Juniors and Seniors.

Hi 260 **Traditional Africa** 3 semester hours

Pre-European and sub-Saharan Africa; anthropological study of traditional Africa's varied cultures; pre-European African history; geographical influences and emergence of African city states and empires; European arrival and slave trade. Prerequisites: One year of college-level history or permission of instructor.

Hi 261
262 **Middle East History I and II** 6 semester hours

The rise and expansion of Islam, the Caliphate, the Muslim civilization, the East-West confrontation; the rise and decline of the Ottoman Empire, its institutions, European colonialism, Ottoman reform and problems, the First World War, and the emergence of new independent states. Prerequisites: Hi 101, 102, or Hi 103, 104.

Hi 265 **Modern African History** 3 semester hours

Colonial and independent Africa with major emphasis on conflict of European and African Cultures; a topical survey of major contours of modern African development; industrialization and urbanization, African socialism and nationalism. Prerequisites: Hi 260 or permission of instructor.

Hi 300 **Seminar in American Historiography** 3 semester hours

Intensive study of original sources and preparation of a research paper; analysis of major schools of historical thought. Prerequisite: Prior written consent of instructor.

Hi 301 **Seminar in American Constitutional History** 3 semester hours

Reading, research and discussion on a phase of American constitutional history; an original paper of significant scholarship is required. Prerequisite: Prior written consent of instructor.

Hi 305 **Seminar in European Historiography** 3 semester hours

To investigate schools of historical thought, attitudes and methods, with research emphasis on the writing of history and discussion of the findings of students. Prerequisite: Written consent of instructor.

Hi 500 **Independent Study in History** 1-3 semester hours

A special opportunity for advanced students to pursue a topic of special interest; investigations into original and authoritative secondary sources; extensive readings and periodic consultations. Prerequisite: Approval of department or consent of instructor.

INTER/INTRA DEPARTMENTAL

In 450 **Foreign Language Intra-Departmental Seminar** 3 semester hours

Presentation of particular theme, genre, period or problem common to Spain, France, Germany; conducted in English by six members of Department of Foreign Languages; offered Spring, 1973. Prerequisites: Completion of Freshman year.

In 300
301 **Evolution of Arts and Ideas** 6 semester hours

The bringing together of ideas and concepts generally separated into specialized areas; working an understanding of 'the

whole' of civilization while probing its 'meaning' as expressed through various media, literature, music, mathematics, science, etc.; six to ten departments represented in offering of course; students may elect either or both semesters; lecture seminars and student projects required. Prerequisite: Juniors and Seniors only.

MATHEMATICS

Ma 110 **College Algebra** 3 semester hours

Properties of the real number system based upon set-theoretical foundations; linear, quadratic, and simultaneous equations, inequalities, absolute value, complex numbers, determinants, mathematical induction, the binomial theorem, permutations, and combinations, series, probability, and statistics. Non-credit for Math majors.

Ma 120 **College Trigonometry** 3 semester hours

Plane trigonometry useful in the teaching of mathematics in the secondary schools and required for the study of calculus; trigonometry of the general angle, the use of logarithms, solution of right triangles, radian measure, identities and other topics. Non-credit for Math majors.

Ma 130 **Modern Mathematics for Elementary Majors** 3 semester hours

Mathematical concepts needed to teach any of the new approaches found in modern arithmetic textbooks; prepares prospective teachers for inevitable future changes in mathematics curricula; the structure of the numbers system; algebraic systems; geometry found in elementary texts. Non-credit for Math majors.

Ma 131 **Modern Geometry for Elementary Majors** 3 semester hours

Geometric concepts from an intuitive point of view; sets of points in a plane will include measurement of length and angles, simple closed curves, circles, mathematical constructions, congruent sets of points, area of plane regions, and graphs of points in plane. Non-credit for Math majors. Prerequisite: 2 years High School College Preparatory Math.

Ma 210 **Calculus I** 4 semester hours

Rate of change of a function; limits, derivatives of algebraic functions and applications of the derivative; integration of algebraic functions and trigonometric functions. Prerequisite: Trigonometry.

Ma 211 **Calculus II** 4 semester hours

Continuation of Calculus I; integration, applications of the definite integral, transcendental functions and methods of integration. Prerequisite: Ma 210.

Ma 220 **Modern Mathematics** 3 semester hours

Relations, functions, binary operations, groups, rings, fields, the structure of the number system, and numeration systems.

Ma 230 **Analytical Geometry** 3 semester hours

Essential classical topics of analytical geometry; graphs and their uses, and applications to empirical curve fitting.

Ma 240 **Abstract Algebra** 3 semester hours

Fundamental concepts of sets, mathematical systems, groups, rings, and fields. Prerequisite: Ma 220.

Ma 310 **Calculus III** 3 semester hours

Analytic geometry of the conic sections, hyperbolic functions, polar coordinates, solid analytic geometry and elementary vector analysis. Prerequisite: Ma 211.

Ma 311 **Calculus IV** 3 semester hours

Partial differentiation, multiple integration, infinite series, and complex numbers and functions. Prerequisite: Ma 310.

Ma 320 **Ordinary Differential Equations** 3 semester hours

Theory and application of ordinary differential equations of the first and second orders, with linear constant-coefficient type; partial differential equations. Prerequisite: Ma 311 (or as co-requisite).

Ma 330 **Linear Algebra** 3 semester hours

Solutions of simultaneous equations by means of matrices and determinants; elementary properties of vector spaces, linear transformations, characteristic values and bi-linear and quadratic forms. Prerequisite: Ma 211; Junior or Senior standing.

Ma 340 **Modern Geometry** 3 semester hours

Axiomatic geometry with emphasis on Euclidean geometry; non-Euclidean geometrics; principle of duality; Desargues', Pascal's and Brianchon's theorems; harmonic sets and divisions; cross ratio and others. Prerequisite: Ma 211; Junior or Senior standing.

Ma 350 **History of Mathematics** 3 semester hours

Surveys the developments of algebra, arithmetic, plane geometry and trigonometry by tracing certain fundamental concepts in mathematics such as number, counting, relations, and others; deductive and inductive reasoning from an axiomatic approach; starts with Euclid and ends with the 20th century. Prerequisite: Math majors or minors or elementary majors with a concentration in Math.

Ma 360 **Number Theory** 3 semester hours

Topics from the theory of numbers; divisibility properties of integers, prime numbers, the Euclidean algorithm, the unique factorization theorem, congruences, Diophantine equations, quadratic reciprocity, number theoretic functions; open to upper class mathematics majors and minors. Prerequisite: Ma 220 or 130.

Ma 401 **Ring Theory** 3 semester hours

Isomorphism theorems; integral domains and fields; maximal, prime and primary ideals; divisibility theory; polynomial rings, radicals; direct sums. Prerequisite: Ma 240.

Ma 410 **Advanced Calculus I** 3 semester hours

Elementary topology; definition and properties of functions; rigorous treatment of integration; Taylor's theorem; infinite series and power series. Prerequisite: Ma 311.

Ma 411 **Advanced Calculus II** 3 semester hours

Functions of several variables; introduction to differential geometry, differential forms, theorems of Gauss, Green and Stokes; Lebesque integration may be included. Prerequisite: Ma 410.

Ma 420 **Probability and Statistics** 3 semester hours

Statistical methods for interpreting the results of experiments; distributions, probability, random variables, binominal

probability, normal probability, statistical inference, linear regression and correlation, analysis of enumerative data, and analysis of variance. Prerequisite: Ma 211; Junior or Senior standing.

Ma 430 **Topology** 3 semester hours

Algebra of sets; cardinal and ordinal numbers; topological spaces; connectedness, compactness, and continuity; separation and countability; axioms; metric spaces; complete metric spaces; product spaces; function and quotient spaces. Prerequisites: Ma 311, 220.

Ma 500 **Independent Study in Mathematics** 1-3 semester hours

Special topics not normally covered in course work; subject matter varies to suit individual and may be related to research activity of the instructor. Prerequisite: Consent of Department.

MEDIA

Me 110 **Introduction to the College Learning Resources Center** 1 semester hour

Understanding information sources and services, search techniques; use of State College and Consortium facilities.

Me 120 **History of Books and Libraries** 3 semester hours

Various forms of written communication throughout the ages; ways in which society has collected, preserved, and disseminated its records.

Me 130 **The Library as a Social Institution** 3 semester hours

Social, political, and economic environments which influence development of libraries and information systems and their role in a democratic society; problems and opportunities of libraries in an age of rapid change, controversy, and technology.

Me 140 **Utilization of Instructional Materials** 3 semester hours

Selection and use of major types of audiovisual materials; use of projection and audio equipment; preparation and use of bulletins, and flannel board.

Me 150 **Photography in Communication** 3 semester hours

Basic principles, skills, techniques of photography; their application to visual communication.

Me 210 **Introduction to Reference Sources** 3 semester hours

Fundamental philosophy and techniques of reference service in the school library; content and use of basic reference tools with practical problems.

Me 220 **Principles of Graphic Communication** 3 semester hours

Language and design of graphic communication; principles from psychology and visual arts; laboratory exercises in creative development of opaque and transparent visual imagery as communication media.

Me 230 **Administration of the School Learning Resources Center** 3 semester hours

Theory and practice or organizing and administering library of materials and program of service fundamental to achievement of educational goals of modern school; covers print and non-print materials.

Me 240 **Elements of Screen Language** 3 semester hours

Images, motion, and sound in film and television; use of frame, camera viewpoint, light and shadow, color, exposure, in visual and aural communication.

Me 245 **History of the Screen** 3 semester hours

Chosen aspects of the history of the moving image and man's uses of it as seen in a wide variety of selected films.

Me 250 **Advanced Photography I** 3 semester hours

Principles and application of zone system; characteristics of photographic materials; critiques; concentration on themes of student's choice. Prerequisite: Me 150 or consent of instructor.

Me 305 **Library Skills in the Elementary School** 3 semester hours

Overview of procedures and materials helpful in teaching essential library skills to elementary school pupils; information location; print and non-print sources. Prerequisite: Open only to Junior and Senior elementary majors.

Me 315 **Cataloging and Organizing Learning Materials** 3 semester hours

Principles and procedures involved in acquisitioning, cataloging, and processing book and non-book materials; skills development in utilizing organizational structure of libraries and in instructing others in use of libraries.

Me 317 **Advanced Cataloging and Classification** 3 semester hours

Practice of the art of cataloging; Anglo-American Rules, Dewey Decimal and Library of Congress Classifications, Sear's and Library of Congress subject headings studied and applied. Prerequisite: Me 315.

Me 320 **Introduction to Screen Education** 3 semester hours

History and philosophy of screen education movement and its relationship to other educational philosophies; centered around concept of visually literate person; screenings of professionally – and student-made films to discover communication about life, society, and education.

Me 330 **Learning Resources for Children** 3 semester hours

Establishes criteria for evaluating and selecting print and non-print materials; explores use and limitations of standard selection aids and review media; discusses special problems associated with censorship, serials, acquisitions procedures, and weeding.

Me 335 **Learning Resources for Young Adults** 3 semester hours

Relationship between educational program of modern secondary school and the collection of book and non-book materials in its library; locating, evaluating, and purchasing suitable materials; brief survey of development of young adult literature; standard review and selection sources; problems of censorship, serials, weeding.

Me 340 **Basic 8mm Film Production** 3 semester hours

Experience in making motion pictures of rudimentary level with or without aural tape accompaniment; critiques of student work.

Me 345 **Producing and Directing Audio Programs** 3 semester hours

Writing, choosing talent, selecting music, and assembling audio programs; radio production; audio instructional materials; use of equipment in student production of actual materials.

Me 350 **Basic Television Production** 3 semester hours

Fundamental techniques and processes of closed circuit television; use of existing videotapes and other visual recordings in enrichment and direct teaching.

Me 420 **The Librarian in the Modern School** 3 semester hours

Prepares school librarian to assist classroom teacher in assembling and introducing materials of all types to pupils through practice in preparing and presenting a resource unit. Prerequisite: Me 210 or 440.

Me 430 **Field Experience** 3 semester hours

Required for students in the school library certification program; affords the opportunity to work in cooperating school library for seventy-five clock hours under supervision of experienced librarian. Prerequisites: Me 210, 230, 310, 330.

Me 435 **Cooperative Experience in Media** 1-6 semester hours

Provides an opportunity to increase media experience through an internship with a sponsoring community organization, institution, or business, objectives of the experience will form basis for a written contract between the student and his faculty advisor. Prerequisite: Any two Media Department courses. Open to Media minors.

Me 440 **Introduction to Bibliography** 3 semester hours

The most important sources of bibliographic information for both print and non-print media; techniques of searching, citation, and methods for competing and evaluating bibliographies.

Me 445 **Bibliographic Data Processing** 3 semester hours

Fundamentals of library systems analysis; application to planning, implementing, and evaluating people-oriented bibliographic systems; assessing practicallty of computer to library uses, working with computer specialists. Prerequisite: Cs 150.

Me 447 **Library Networks and Teleprocessing** 3 semester hours

The role of the time-shared computer in furthering library networks and sub-networks; current and possible future developments; non-computer related activities of networks. Prerequisite: Cs 150.

Me 450 **Preparation of Inexpensive Instructional Media** 3 semester hours

Laboratory practice in creating visual instructional media applying lettering, coloring and mounting techniques; end products include pictures, maps, charts, and graphs for projected and non-projected use.

Me 470 **Communication Theory** 3 semester hours

Theories of communication; identification of modes and channels; practical experience in designing and disseminating messages.

Me 480 **Producing and Directing the Television Program** 3 semester hours

Sound, lighting, graphics, staging, direction, and equipment operation with hands-on practical experience. Prerequisite: Me 345.

MUSIC

Mu 100 **Music Appreciation** 3 semester hours

Historical and critical study of music from Middle Ages to modern times; no credit given for this course to those who have successfully completed Mu 241 and/or Mu 242.

Mu 110 **Introduction to Music** 3 semester hours

Acquaints students with the basic materials of music through singing and auralization of simple rhythms, intervals, melodies in both major and minor modes; directed listening and use of simple percussion, melodic, and chordal instruments.

Mu 120 **Functional Keyboard and Sightsinging** 3 semester hours

Ear training and development of skills through sight and singing, tonal-rhythmic dictation and keyboard exercises; discussion of individual interests and needs in strengthening weaknesses or aptitudes in music.

Mu 130 **Harmony I** 3 semester hours

Creative utilization of music theory; primary and secondary chords, four-part harmonization, harmonic analysis. Prerequisites: Mu 110 and consent of instructor.

Mu 131 **Harmony II** 3 semester hours

Advanced music theory; modulation, secondary chord function, seventh chords; analysis and creative work. Prerequisite: Mu 130.

Mu 140 **Choir** ½ semester hours

Mixed chorus repertoire; concentration on vocal problems and techniques. Admission by audition.

Mu 150 **New W.C.S. Minstrels** ½ semester hours

Training in musicianship and finesse required to sing music especially written for female voices. Admission by audition.

Mu 160 **Orchestra** ½ semester hours

Study of standard symphonic repertoire; techniques of orchestral routine and performance. Admission by audition.

Mu 170 **Concert Band** ½ semester hours

Study and experience in repertoire and performance. Admission by audition.

Mu 180 **Strings** 1 semester hour

Individual or class instruction in violin, viola, cello, bass. Open to students with previous training. Enrollment by permission of instructor.

Mu 190 **Winds** 1 semester hour

Individual or class instruction in woodwinds or brass. Open to students with previous training. Enrollment by permission of instructor.

Mu 200 **Piano** 1 semester hour

Individual instruction. Open only to more advanced students with previous training. Enrollment by permission of instructor.

Mu 210 **Voice** 1 semester hour

Individual instruction. Open only to more advanced students with previous training. Enrollment by permission of instructor.

Mu 241 **History and Literature of Music I** 3 semester hours

From the legacy of Greece and Rome to the early Romantic composers.

Mu 242 **History and Literature of Music II** 3 semester hours

The Romantic Period to Contemporary twentieth century innovations and techniques.

Mu 250 **Opera** 3 semester hours

Analysis of the masterworks of standard operatic repertoire; use of recordings and tapes.

Mu 260 **Music of the Baroque Period** 3 semester hours

The period of 1600-1750; emphasis on Bach and Handel.

Mu 270 **Music of the Classical Period** 3 semester hours

Progressing from the Rococo to the masterworks of Haydn, Mozart and Beethoven.

Mu 275 **Music of the Romantic Period** 3 semester hours

A general listener's approach to the instrumental and vocal music of Schubert, Chopin, Schumann, and Mendelssohn through Liszt, Berlioz, Verdi, Wagner, Brahms, Tschaikowsky and other 19th century composers.

Mu 280 **Twentieth Century Music** 3 semester hours

From the impressionists through Stravinsky, the Schoenberg school, Bartok, Hindemith, and other significant composers including electronic and aleatory music.

Mu 290 **Golden Age of Piano Literature** 3 semester hours

Beginning with the piano works of Beethoven and continuing through the Romantic tradition to the impressionists.

Mu 300 **Symphonic Literature** 3 semester hours

Symphonic masterpieces of the 18th and 19th centuries from Haydn to Richard Strauss.

Mu 310 **The Concerto** 3 semester hours

History and development beginning with the concertato style in the Baroque period; Haydn to present.

Mu 320 **Chamber Music Literature** 3 semester hours

Development, history, and literature of chamber music; emphasis on the 18th and 19th centuries.

Mu 330 **Music in America** 3 semester hours

Survey of music history and literature in America from the early colonies to the present, including jazz and other mediums.

Mu 500 **Independent Study in Music** 1-3 semester hours

An opportunity for further study in a special field of interest under faculty supervision. Prerequisite: Consent of instructor.

PHILOSOPHY

Ph 100 **Logic, Knowledge and Existence** 3 semester hours

Logic, the common method of the sciences; the rules of syllogistic reasoning integrated with other forms of knowledge for a balanced human existence.

Ph 101 **Introduction to Philosophy** 3 semester hours

Nature, purpose, problems of philosophy; to challenge the student in the development of his own philosophical perspective.

Ph 120 **Philosophy of Man: Dimension of Human Existence** 3 semester hours

Your body is definitely "you," but is that all? The self, the soul, consciousness, thinking, love, life, evolution, death, and immortality.

Ph 140 **Ethics: The Moral Dimension of Man's Existence** 3 semester hours

Is life worth living? Problems of personal knowledge, judgement, conscience, freedom and action as applied to contemporary man and society. Prerequisite: Ph 100, or 101.

Ph 200 **Metaphysics: The Philosophy of Being, Knowledge and God** 3 semester hours

Origin and development of the metaphysical problems of being, knowledge and God in western philosophy. Prerequisite: Ph 100, or 101.

Ph 210 **Philosophy of Religion** 3 semester hours

Mythical, natural and revealed problem of God; relationship of faith and reason, of theology and philosophy, of art and science from west to east. Prerequisite: Ph 100, or 101.

Ph 220 **Existentialism** 3 semester hours

Origin of contemporary existentialism; the problems of existence, being, nothingness, subjectivity and freedom in such philosophers as Kierkegaard, Nietzsche, Jaspers, Heidegger, Marcel and Sarte. Prerequisite: Ph 100, or 101.

Ph 230 **American Philosophy** 3 semester hours

Shaping of the American experience from Plymouth Rock to acid rock; Emerson, James, Pierce, Royce, Dewey, Whitehead, Hoffer, Marcuse. Prerequisite: Ph 100,or 101.

Ph 240 **History of Ancient and Medieval Philosophy** 3 semester hours

From wonder, myth and poetry to the scholastics; Homer, Plato, Augustine to Boethius, Scotus, Aquinas.

Ph 245 **History of Modern and Contemporary Philosophy** 3 semester hours

Search and reaction to new absolutes — Descartes, Locke, Hume, Kant and Hegel; impact of modern science — Comte, Husserl, Kierkegaard, Sarte, Ayer, Quine, and Whitehead. Prerequisite: Ph 240.

Ph 500	Seminar: Topics in Philosophy Specific subject matter chosen by department in conjunction with students' needs and demands.	3 semester hours

PHYSICAL EDUCATION - Men

Pe 200	Swimming	¼ semester hour
Pe 200	Flag Football	¼ semester hour
Pe 200	Advanced Flag Football	¼ semester hour
Pe 200	Soccer	¼ semester hour
Pe 200	Basketball	¼ semester hour
Pe 200	Advanced Basketball	¼ semester hour
Pe 200	Volleyball	¼ semester hour
Pe 200	Softball	¼ semester hour
Pe 200	Badminton	¼ semester hour
Pe 200	Candlepin Bowling	¼ semester hour
Pe 200	Ten Pin Bowling	¼ semester hour
Pe 200	Golf	¼ semester hour
Pe 200	Gymnastics	¼ semester hour
Pe 200	Tennis	¼ semester hour
Pe 300	Co-Ed Fencing	½ semester hour
Pe 300	Co-Ed Square Dancing	½ semester hour
Pe 300	Modern Dance	½ semester hour
Pe 300	Senior Life Saving	½ semester hour
Pe 300	Water Safety Instructor	1 semester hour

NOTE: Physical Education courses listed beyond this point may not be used to fulfill the general requirements in physical education.

Pe 250 **Coaching Team Sports** 3 semester hours

The techniques and strategies of coaching football, basketball and baseball; each sport analyzed in terms of selection of team, conditioning, offensive and defensive patterns and the handling of the team in game situations. Prerequisite: Pe 355.

Pe 345 **Analysis of Motor Learning** 3 semester hours

Comprehensive learning processes involving motor learning, perceptual motor concepts and training and the development and teaching of motor skills. Beginning Spring, 1974.

Pe 350 **Gymnastics** 2 semester hours

Elementary course in gymnastic events; tumbling, floor excercise, balance beam, uneven parallel bars, trampoline, gymnastic hand apparatus.

Pe 355 **Principles of Coaching** 3 semester hours

Emphasis on the understanding and skills necessary for a person to coach children in any sport; the values a coach must teach, the relationships the coach must establish between himself and the school; the team, the individual player, the opposing teams and the community will be analyzed.

Pe 360 **Coaching Individual Sports** 3 semester hours

Techniques and strategies of coaching track and field, swimming and tennis; each sport will be analyzed in terms of conditioning, training programs, selection of events and the handling of the individuals and the team in competition. Beginning Spring, 1973. Prerequisite: Pe 355.

Pe 365 **Intramural Athletics** 2 semester hours

The planning and implementing of intramurals in schools; tournaments, methods of selecting teams, scheduling, officiating, financing and promoting different activities explored. Beginning Fall, 1973.

Pe 370 **Fundamentals of Athletic Training** 3 semester hours

Basic anatomy, taping, techniques and methods employed in treating athletic injuries; training in the operation of the whirlpool bath, hydrocollator, heat lamp and other equipment used in training rooms. Beginning Spring, 1973.

Pe 375 **Recreational Programs** 3 semester hours

Various facets of recreational programs and leisure time activities; programs for schools, "Y's", playgrounds, evening centers, camps and parks will be examined along with industrial and commercial programs. Beginning Spring, 1974.

Physical Education - Women

Pe 100 **Form and Fitness** ½ semester hour

Pe 101 **Adapted Physical Education** ½ semester hour

Pe 101 **Apparatus** ¼ semester hour

Pe 101 **Archery** ¼ semester hour

Pe 101 **Badminton** ¼ semester hour

Pe 101	Bowling	¼ semester hour
Pe 101	Basketball	¼ semester hour
Pe 101	Field Hockey	¼ semester hour
Pe 101	Golf	½ semester hour
Pe 101	Gymnastics	½ semester hour
Pe 101	Lacrosse	¼ semester hour
Pe 101	Modern Dance	½ semester hour
Pe 101	Modern Gymnastics (Rhythmical)	¼ semester hour
Pe 101	Sailing	¼ semester hour
Pe 101	Softball	¼ semester hour
Pe 101	Swimming – Beginning, Intermediate	½ semester hour
Pe 101	Tennis	¼ semester hour
Pe 101	Volleyball	¼ semester hour
Pe 101	Folk Dance	¼ semester hour
Pe 300	Co-Ed Fencing	½ semester hour
Pe 300	Co-Ed Square Dancing	½ semester hour
Pe 300	Modern Dance	½ semester hour
Pe 300	Senior Life Saving	½ semester hour
Pe 300	Water Safety Instructor	1 semester hour

NOTE: Physical Education courses listed beyond this point may not be used to fulfill the general requirements in physical education.

Pe 250 **Coaching Team Sports** — 3 semester hours

Designed for men Elementary H. P. E. Concentration students. See Physical Education – Men for course description.

Pe 320 **Physical Education in the Elementary School** — 3 semester hours

The meaning and purpose of physical education; physical, social, emotional and intellectual characteristics of children in relation to motor learning; methods and techniques of physical education; planning and evaluating the program; activity areas include physical fitness, games, classroom activities and relaxation ideas for children.

Pe 325 **Rhythmics and Dance** 2 semester hours

Rhythmic structure employed in musical composition; the relationship of rhythm to basic dance skills and all motor skills that may be performed to music or rhythm; teaching of square, round and folk dances presented.

Pe 340 **Movement Exploration** 3 semester hours

A creative and individualized approach to teaching physical education; incorporates the natural inclinations of children by using the whole body in company with the mind and imagination; selected activities to foster and develop the concepts or elements of movement, i.e., body awareness, space and qualities of movement.

Pe 345 **Analysis of Motor Learning** 3 semester hours

Comprehensive learning processes involving motor learning; perceptual motor concepts and training; the development and teaching of motor skills. Beginning Spring, 1974.

Pe 350 **Gymnastics** 2 semester hours

See Physical Education — Men for course description.

Pe 355 **Principles of Coaching** 3 semester hours

See Physical Education — Men for course description.

Pe 365 **Intramural Athletics** 2 semester hours

See Physical Education — Men for course description.

Pe 375 **Recreational Programs** 3 semester hours

See Physical Education — Men for course description.

Pe 500 **First Aid** ½ semester hour

Standard Red Cross theory and skills of emergency treatment for poisoning, shock, wounds, artificial respiration, and broken bones; accident prevention is main objective of the course. Required of all elementary majors.

PHYSICS

Py 101 **Physical Science I** 3 semester hours

Survey of physics and chemistry; evolution of concepts and theories; measurement, gravitation, energy, conservation laws, kinetic-molecular theory, and wave motion; two lectures and a two-hour laboratory per week.

Py 102 **Physical Science II** 3 semester hours

Light, electricity, magnetism, fundamentals of chemistry, atoms and molecules, the structure of atoms, quantum theory and relativity; two lectures and a two-hour laboratory per week. Prerequisite: Py 101 or consent of instructor.

Py 103 **Science and Society** 3 semester hours

Physics examined in a historical and social context; the impact of science on man's interpretation of the natural world, social activities such as economics and war, and the 'humanistic' disciplines. Recommended for non-science majors interested in studying the implications of science in the modern world.

Py 105 **Introduction to Astronomy** 3 semester hours

The tools of the astronomer, the nature of celestial space; star locations, motions, nature and evolution; the universe; three lectures per week.

Py 110 **Biological Physics I** 3 semester hours

Traditional areas of introductory physics, such as mechanics, heat, sound, with emphasis on bio-instrumentation; two lectures and one two-hour laboratory per week. Prerequisites: Six hours of biological science and/or consent of instructor.

Py 111 **Biological Physics II** 3 semester hours

Continuation of Py 110; research project required; two lectures and one two-hour laboratory per week. Prerequisite: Py 110.

Py 115 **General Physics I** 4 semester hours

The mechanics of fluids and solids, properties of matter, and heat energy; three lectures and one two-hour laboratory per week. Prerequisite: One year of college mathematics, which may be taken concurrently.

Py 116 **General Physics II** 4 semester hours

Sound, theories of light, electricity and magnetism, and topics in modern physics; three lectures and a two-hour laboratory per week. Prerequisite: Py 115.

Py 120 **Physics I** 4 semester hours

Introduction to classical physics with emphasis on fundamental principles and conservation laws; topics include Newtonian mechanics and heat; three lectures and one two hour laboratory per week. Prerequisite: One year of calculus which may be taken concurrently. Recommended for Physics and Mathematics majors.

Py 121 **Physics II** 4 semester hours

Properties of the electro-magnetic field and wave phenomena; three lectures and one two-hour laboratory per week. Prerequisite: Py 120.

Py 201 **Mathematical Physics I** 3 semester hours

Applied mathematics for students majoring in science or mathematics; series, expansions, use of complex numbers, determinants, and matrices, partial derivatives and multiple integrals; three lectures per week.

Py 202 **Mathematical Physics II** 3 semester hours

Vector analysis; Fourier series, ordinary differential equations; three lectures per week. Prerequisite: Py 201.

Py 203 **Mathematical Physics III** 3 semester hours

Calculus of variations, special functions of physics, coordinate transformations, and functions of a complex variable; three lectures per week. Prerequisite: Py 202.

Py 204 **Mathematical Physics IV** 3 semester hours

Series solutions of differential equations, integral transforms, partial differential equations, probability; three lectures per week. Prerequisite: Py 203.

Py 210 **Mechanics I** 4 semester hours

Kinematics and dynamics of point masses, the conservation laws, motion of a system of particles, special theory of relativity, Lagrange's and Hamilton's equations; three lectures and one two-hour laboratory period per week. Prerequisites: Py 121, Ma 211, and Py 201 which may be taken concurrently.

Py 211 **Mechanics II** 4 semester hours

Continuum mechanics, mechanics of rigid bodies, theory of vibrations; three lectures and one two-hour laboratory per week. Prerequisite: Py 210.

Py 220 **Thermodynamics** 3 semester hours

Introduction to kinetic theory, and statistical mechanics; three lectures per week. Prerequisites: Py 121 or 116, and Py 201 which may be taken concurrently.

Py 230 **Electricity and Magnetism** 4 semester hours

Electric and magnetic properties of matter; determination of electrical potentials, field intensities, forces, and induction; the laws of electricity and magnetism in Maxwell's differential form; three lectures and one two-hour laboratory per week. Prerequisites Py 201, which may be taken concurrently.

Py 231 **Electricity and Magnetism II** 4 semester hours

Solution of Laplace's equation, further consideration of Maxwell's equations, plane waves, guided waves, dipole radiation; three lectures and one two-hour laboratory per week. Prerequisite: Py 230.

Py 240 **Optics** 3 semester hours

Reflection, refraction, difraction, interference and polarization; the wave model of light; three lectures per week. Prerequisite: Py 116 or Py 121.

Py 300 **Investigation of Special Topics in Physics** 1-3 semester hours

Guided-study course which offers an opportunity to make an in-depth study of a special topic in physics as determined by needs and interest of the individual student. Prerequisite: Consent of instructor.

Py 310 **Modern Physics** 3 semester hours

The atomic nature of matter, special relativity, atomic models, the wave nature of matter, and radioactivity; three lectures per week. Prerequisites: One year of Physics and one year of Calculus.

Py 320 **Quantum Mechanics** 3 semester hours

The uncertainty principle, wave-particle duality, the Schrodinger equation, probability amplitudes, and applications to one-dimensional problems; three lectures per week. Prerequisite: Py 231.

Py 330 **Senior Physics Laboratory** 1 semester hour

Laboratory work designed to meet the individual needs of students; experiments will be selected from electro-magnetism, optics, and modern physics; one three-hour laboratory period per week. Prerequisite: Py 231, or consent of instructor.

POLITICAL SCIENCE

Po 100 **Federal and State Constitutions** — 1 semester hour

Required of all students who do not take one of the following courses: Hi 111, 112, or 210.

Po 101 **Principles of Political Science** — 3 semester hours

An introduction to political analysis; the study of the problems of natural law, power, justice and liberty.

Po 110 **American Government** — 3 semester hours

Our national government; its federal form, its system of checks and balances in national and state governments, its evolutionary nature. Prerequisite: Po 101.

Po 115 **State and Local Government** — 3 semester hours

The impact of the community upon intergovernmental relations; development of metropolitan problems; the making of public policy and citizen control. Prerequisite: Po 101.

Po 120, 121 **Comparative Politics** — 6 semester hours

The political systems of major European and non-European systems; historic development of these systems and their ideologies. Prerequisite: Po 101.

Po 201, 202 **International Relations I, II** — 6 semester hours

Current world affairs; elements of national power and the factors that influence power and the formation and execution of foreign policy. Prerequisite: Po 101.

Po 210 **U.S. Constitutional History** — 3 semester hours

See Hi 210 for course description.

Po 211, 212 **History of U.S. Foreign Policy** — 6 semester hours

See Hi 211 and 212 for course description.

Po 215 **Political Parties and Pressure Groups** — 3 semester hours

The functions, organization and methods of political parties; the role of interest groups in the American political process. Prerequisite: Po 101, or consent of instructor.

ro 217 **The Legislative Process** — 3 semester hours

Nature and functions of the U.S. Congress; legislative campaigns, the politics of law making, congressional investigation and major problems of Congress. Prerequisites: Po 101, 110, or consent of instructor.

Po 220 **Government and Politics of Latin America** — 3 semester hours

The political organization, problems and possibilities of some representative Latin American countries; crisis areas such as Cuba and American responses to these crisis areas. Prerequisite: Po 101, or consent of instructor.

Po 230 **The Politics of the Middle East** — 3 semester hours

The Eastern Mediterranean world in the 20th century; problems of the new nations of the area and conflicts among

them; the role of the major powers in this region. Prerequisite: Po 101, or consent of instructor.

Po 238 **History of European Political Philosophy I** 3 semester hours

See Hi 238 for course description.

Po 239 **History of European Political Philosophy II** 3 semester hours

See Hi 239 for course description.

Po 250 **Soviet Government and Politics** 3 semester hours

The nature of the Soviet system of government; the dynamics of modern totalitarian dictatorship and the role of the party as reflected in domestic political developments. Prerequisite: Po 101, or consent of instructor.

Po 255 **Soviet Foreign Policy** 3 semester hours

Analysis of the history of Soviet foreign relations under Lenin, Stalin, Khrushchev and Brezhnev; the role of ideology in the formulation and implementation of Soviet foreign policy. Prerequisite: Po 101, or concent of instructor.

Po 260 **Government and Politics of China** 3 semester hours

Political and international developments of contemporary China; communist ideology and instruments of power. Prerequisite: Po 101, or consent of instructor.

Po 270 **Comparative Revolution** 3 semester hours

The causes and dynamics of major revolutionary movements and ideologies in Western history; extensive discussion of readings. Prerequisite: Juniors and Seniors.

Po 280 **Dynamics of Decision Making in American Foreign Policy since the Cold War** 3 semester hours

The nature of national interests and the problems of implementation; analysis of selected foreign policy formulations under recent presidents. Prerequisite: Hi 112, or Po 101, or consent of instructor.

Po 301 **Seminar in American Constitutional History** 3 semester hours

See Hi 301 for course description.

Po 340 **Seminar in Revolution** 3 semester hours

In-depth research and discussion; each student selects an aspect of revolutionary events or components and explores it within and without the classroom. Prerequisite: Po 270, or consent of instructor.

PSYCHOLOGY

Ps 110 **General Psychology I** 3 semester hours

Psychology as a behavioral science; emphasis on history, scientific method, brain, nervous system, maturation, development, learning, motivation, and perception.

Ps 111 **General Psychology II** 3 semester hours

Orientation to psychology as introduced in General Psychology I; emphasis upon emotion, behavior disorders and topics in the social milieu. Prerequisite: Ps 110.

Ps 113 **History and Systems of Psychology** 3 semester hours

Historical and systematic analysis of psychological thought and points of view; schools or systems of psychology, such as structuralism, functionalism, behaviorism, hormic, psychoanalytic and Gestalt psychology. Prerequisite: Ps 110.

Ps 114 **Psychological Statistics** 3 semester hours

Statistical principles and techniques as applied to psychological data; the selection of procedures appropriate to the problems, interpretation of outcomes, data tabulation and reduction, measures of central tendency and variability, correlation and prediction, association and analysis of variance. Prerequisite: Ps 110.

Ps 120 **Child Psychology** 2 semester hours

The mental, emotional, social and physical developments from conception to early adolescence; critical and technical review of research and theories. Prerequisite: Ps 110.

Ps 130 **Abnormal Psychology** 3 semester hours

The etiology, dynamics and treatment of psychopathology and its relationship to normal personality; contemporary approaches as well as traditional categories of psychopathology. Prerequisite: Ps 110.

Ps 150 **Social Psychology** 3 semester hours

The individual in social situations; the learning of role behavior with an emphasis on the socialization process, personality, culture, attitudes, and motives. Prerequisite: Ps 110.

Ps 160 **Theories of Personality** 3 semester hours

Comprehensive treatment of major personality theories; emphasis on the great controversies, biographies of outstanding personality theorists, psychological schools and systematic theories. Prerequisite: Ps 110.

Ps 171
172 **Psychology of Adolescence** 3 semester hours

The mental, emotional, social and physical changes of the adolescent; special emphasis on peer group and school influences on development and the contemporary problems of adolescence. Prerequisite: Ps 110.

Ps 180 **Psychology of Learning** 3 semester hours

Principles and theories of learning; emphasis on experimental findings and the position of learning in general theories of behavior. Prerequisite: Ps 110.

Ps 190 **Child Growth and Development** 3 semester hours

The human organism from conception through adolescence; sequential patterns and characteristics of personality development vis-a-vis physical growth. Required of elementary education majors. Prerequisite: Ps 110.

Ps 200 **Psychological Methods** 3 semester hours

Questions about behavior are formulated and then tested through experiments; lectures and laboratory experiences used to expose psychology majors to the procedures of designing, conducting, and reporting experiments. Prerequisite: Ps 110.

Ps 210 **Sensation and Perception** 3 semester hours

Problems and methods in the study of selected sensory and perceptual processes; contemporary theory and research. Prerequisite: Ps 110.

Ps 220 **Motivation** 3 semester hours

Primary and learned motivation, conditions that arouse, sustain and direct behavior; topics include frustration, conflict, stress, instinct, motives, biological and acquired basis of emotions. Prerequisite: Ps 110. Recommended: Ps 111.

Ps 230 **Physiological Psychology** 3 semester hours

Psychobiological problems; current physiological research in the fields of emotion, motivation and learning; extensions of physiological methods into other psychological areas. Prerequisite: Ps 110.

Ps 240 **Child Behavior and Development** 3 semester hours

Psychological developments of the child, including theory, methods, and data of child behavior studies; special problems of control and measurement. Prerequisite: Ps 110.

Ps 250 **Humanistic Psychology** 3 semester hours

Humanistic view of psychology which emphasized the existential phenomological approach of human behavior; personality and psychotherapy. Prerequisites: Ps 110, 111.

Ps 300 **Psychology of Adjustment** 3 semester hours

Development of health and personality of the student, the family, and the teacher; contributions of constitutional and environmental factors to adjustive behavior and the establishment of values as applied to teaching and life; techniques for appraising the degree of adjustment; observation and field trips to social agencies and institutions are arranged. Prerequisite: Ps 110.

Ps 310 **Advanced Experimental Psychology** 3 semester hours

Laboratory procedures and techniques for studying behavior; data, theories and methods of investigation; selected projects carried out by members of the class. Prerequisites: Ps 110, 200.

Ps 320 **Psychology of Subnormal and Unadjusted Children** 3 semester hours

The psychology and treatment of children having superior or inferior intellectual ability, defective vision, hearing, speech and physical handicaps; the mental equipment of individual children, different degrees of retardation and their causes, and disorders of behavior which frequently are concommitant; the psychological bases of a suitable curriculum for mentally retarded children evaluated. Prerequisite: Ps 110.

Ps 340 **Psychology of the Culturally Deprived** 3 semester hours

Detection of the culturally deprived child in the regular classroom, what his needs are and how they may be met; a practical approach developed for adjusting instructions to the individual pupil; a study of the visual and manipulative devices that can be used to the advantage of the culturally deprived; special stress placed on appropriate methods and materials. Prerequisite: Ps 110.

Ps 350 **Introduction to Psychometrics** 3 semester hours

Instruments and methods employed in the evaluation of the psychological factors of human beings; current instruments designed to measure intelligence, aptitude, interest and personality. Prerequisite: Ps 110.

Ps 410 **Introduction to the Study of Exceptional Children** 3 semester hours

Etiology, classification, and problems of children who have physical disability, mental retardation, emotional or social difficulties, giftedness; the home, school and community are considered in relation to the child's mental health. Prerequisite: Ps 110.

Ps 420 **Clinical Psychology** 3 semester hours

Various approaches to the treatment of emotional disorders; the psychoanalytic approach, the behavior modification approach, and the client-centered approach; case studies will be presented and discussed in relation to the various approaches. Prerequisite: Ps 110.

Ps 500 **Independent Study in Psychology** 1-3 semester hours

The student will pursue an area of special interest through research or field work experience under close supervision of a faculty member. Prerequisite: Consent of instructor.

SECONDARY EDUCATION

Ed 101
102 **History and Philosophy of Education** 3 semester hours

Ed 101 is taken in the first half of that semester in which Student Teaching is taken during the second half.
Ed 102 is taken in the second half of that semester in which Student Teaching is taken during the first half.

Contemporary problems of education in relation to selected ancient, medieval, modern philosophers of education. Open only to Secondary Education minors.

Ed 105 **Education and Existential Philosophy** 3 semester hours

Theistic, atheistic and phenomenological views of existence in relation to contemporary problems of education. Prerequisite: Ed 100, 101, or 102, or consent of instructor.

Ed 111
112 **Educational Measurement and Evaluation** 3 semester hours

Ed 111 is taken in the first half of that semester in which Student Teaching is taken during the second half.
Ed 112 is taken in the second half of that semester in which Student Teaching is taken during the first half.

Behavioral objectives, test construction, techniques of student evaluation and grading, standardized testing, statistics; current issues in measurement. Open only to Secondary Education minors.

Ed 121
122 **Principles of Guidance** 3 semester hours

Ed 121 is taken in the first half of that semester in which Student Teaching is taken during the second half.
Ed 122 is taken in the second half of that semester in which Student Teaching is taken during the first half.

Considers role of guidance and counseling in the school; teacher's responsibilities as a functioning member of the guidance staff; open only to Secondary Education minors. Prerequisite: Juniors and Seniors only.

Ed 130 **Education of the Gifted** 3 semester hours

Identification, characteristics and personality factors of the gifted; the teacher's role and various organizational patterns; innovative procedures and techniques to nurture creativity. Prerequisites: Ps 190, or Ps 171 and 172. Open to Junior and Senior Education majors and minors.

Ed 140 **Urban Education** 3 semester hours

Development of understanding of the social, psychological and educational problems of the culturally different; strategies and techniques for teaching in the inner-city; practicum. Prerequisite: Open to upperclassmen, or with consent of instructor.

Ed 150 **Education and Race Relations** 3 semester hours

Education in the promotion of interracial understanding; study of Black American and American Indian; contribution to social, intellectual history and contemporary affairs; appreciation and contributions of the culturally different. Prerequisites: One year of United States History and consent of instructor.

Ed 160 **Social Action Education Practicum** 3 semester hours

Work study program designed to provide students with an opportunity to work in different social and educational agencies under supervision. Prerequisite: Upperclassmen.

Ed 170 **Educational Psychology** 3 semester hours

Learning and developmental processes, motivation, retention, relationships of intelligence and achievement, personality, emotional aspects of learning. Prerequisite: Ps 110.

Ed 600 **Orientation to Secondary Education** 2 semester hours

Experience in schools, observation, participation in junior-senior high school; investigation of alternative, free, innovative schools; seminar style class meetings. Prerequisite: Open to Sophomores only.

Ed 610 **Teaching Methods and Skills in Biology** 3 semester hours

Philosophy, theory, and practice of biological science teaching in the secondary school; opportunity to develop both theoretical insight and practical knowledge and skills required in teaching of biology. Required of Secondary Education minors majoring in biology; limited to Juniors. Prerequisite for Student Teaching.

Ed 615 **Teaching Methods and Skills in Geography** 3 semester hours

Develop knowledge and skills for effective teaching of geography at the secondary school level; utilization of teaching aids, materials and community resources; participation in planning, developing, and presentation of micro-lesson in teaching geography. Required of Secondary Education minors majoring in geography; limited to Juniors. Prerequisite for Student Teaching.

Ed 620 **Teaching Methods and Skills in English** 3 semester hours

Small group discussion, improvisation, writing workshop, and more traditional methods for developing students' speaking, listening, writing, reading, and thinking skills; ideas for student-centered assignments based on psychological developement and individual experience. Required of Secondary Education minors majoring in English; limited to Juniors. Prerequisite for Student Teaching.

Ed 630 **Teaching Methods and Skills in French** 3 semester hours

History of modern language education in the United States; current methods of teaching French to include audio-lingual and cognitive approaches; consideration of unit instruction, textbooks and tests; observation of secondary school French classes. Required of Secondary Education minors majoring in French; limited to Juniors. Prerequisite for Student Teaching.

Ed 635 **Teaching Methods and Skills in Spanish** 3 semester hours

History of modern language education in the United States; current methods of teaching Spanish to include audio-lingual and cognitive approaches; consideration of units in linguistics and cultural material; observation of secondary school Spanish classes, English as a second language, and bi-lingual programs. Required of Secondary Education minors majoring in Spanish; limited to Juniors. Prerequisite to Student Teaching.

Ed 640 **Teaching Methods and Skills in History** 3 semester hours

Develop knowledge and skills for effective teaching of history; special emphasis placed on inquiry approach to teaching history; demonstration classes and micro-teaching experiences develop full perspective in this area. Required of Secondary Education minors majoring in History; limited to Juniors. Prerequisite for Student Teaching.

Ed 650 **Teaching Methods and Skills in Mathematics** 3 semester hours

Teaching of junior, senior high mathematics concepts; observations, reports of demonstration classes, tutoring, micro-teaching; aids, lesson plans; reading skills in mathematics teaching. Required of Secondary Education minors majoring in Mathematics; limited to Juniors. Prerequisite for Student Teaching.

Ed 660 **Teaching Methods and Skills in Physical Sciences** 3 semester hours

Instruction in secondary school physical science teaching; overview organization and presentation of subject matter, equipment and techniques; trends of science in secondary schools. Required of Secondary Education minors majoring in Physical Sciences; limited to Juniors. Prerequisite for Student Teaching.

Ed 670 **Principles and Curriculum of Secondary Education** 3 semester hours

Goals, curriculum, management, school organization; pupil personnel, teaching techniques, contemporary issues. Required for Secondary Education minors. Prerequisite: Open to Juniors and Seniors. Prerequisite for Student Teaching.

Ed 690 **Teaching of Reading in Secondary Schools** 3 semester hours

Fundamentals of developmental and corrective reading at secondary school level; reading and study skills in content subject. Required of all English majors minoring in Secondary Education. Prerequisite: Open only to Juniors and Seniors.

Ed 695 **Diagnostic and Remedial Techniques in Secondary Reading** 3 semester hours

Symptoms and causes of reading disabilities, formal and informal reading tests; remedial principles and techniques; students may work with pupils at junior, senior high school level with reading difficulties. Prerequisites: Ed 690; open only to Seniors.

Ed 701
702 **Student Teaching** 8 semester hours

Teaching in secondary schools under supervision of cooperating teachers and college supervisors. Prerequisites: Ed 670; Course in Teaching Methods and Skills in (content major). Open only to Seniors during first semester on quarter basis.

Ed 705 **Seminar in Secondary Education** 3 semester hours

Analysis and evaluation of teaching experience; job market and graduate school possibilities. Prerequisites: Ed 670 and 701, 702.

Ed 710 **Independent Study in Education** 1-3 semester hours

Execute an original project or research study under contract with Secondary Education advisor. Prerequisite: Open only to Seniors with Secondary Education minor.

SOCIOLOGY

So 100 **Introductory Sociology I** 3 semester hours

Man's cultural heritage, the environmental and social forces that shape personality, the influence of the group on the individual, and the nature of social institutions; stress placed upon contemporary American society.

So 101 **Marriage and the Family** 3 semester hours

Patterns of courtship and marriage within the American family today, theories of mate selection, social class differences, marital laws, marital predictions, and the role of the child within the socialization process.

So 200 **Introductory Sociology II** 3 semester hours

Continuation of So 100; critical analysis of the social, political, urban and industrial changes of American society; broad introduction to specific areas and problems. Prerequisite: So 100.

So 201 **Social Stratification** 3 semester hours

Recurrent patterns of inter-group contact, differentation, ranking and evaluation; the theories and concepts which explain the development process of open and closed societies, the characteristics of stratification systems, and their pervasive influence on social institutions. Prerequisite: So 100.

So 202 **Sociology of Education** 3 semester hours

Study of education, emphasizing the social process as well as the institutional structure; social roles of teachers, administrators, pupils, the group basis of education, and community influence. Prerequisite: So 100.

So 203 **Cultural Anthropology** 3 semester hours

Modern cultural anthropology with cross-cultural emphasis on the human capacity for culture, social system, technology, ideology and significant aspects of the process of fieldwork. Prerequisite: So 100.

So 204 **The Sociology of Deviance** 3 semester hours

Social causes and apparent consequences of deviant behavior; the social determinants of the behavioral responses which are considered to be deviations within particular social contexts. Prerequisite: So 100.

So 205 **Social Science Research Methods** 3 semester hours

Designed to prepare students majoring in sociology and economics for undertaking research projects; research methodology and presentation of data; field problems used as vehicle of instruction. Prerequisite: So 100.

So 300 **Urban Sociology** 3 semester hours

The history of the city; the urban phenomena including the social psychology of man in the city, the city as a social system and urban problems connected with social planning in urbanized areas; the contemporary American metropolis with some attention to cross-cultural urban phenomena as well. Prerequisite: So 200.

So 301 **Social Psychology** 3 semester hours

Dynamics of small group involvement and its effect on the individual's psychology as shaped by environmental influences. Prerequisite: So 200.

So 302 **Social Philosophy** 3 semester hours

Content and historical significance which has influenced the development of social thought and theory; ideologies which serve as the basis of modern society. Prerequisite: So 200.

So 303 **Statistical Analysis** 3 semester hours

Basic tools of statistical analysis appropriate to research in the social sciences; topics include measures of central tendency, hypotheses testing, time series, index numbers, regression and correlation. Prerequisite: So 200.

So 304 **Exploration in Racial Relations** 3 semester hours

Basic concepts for development of ethnic and racial relations; deals primarily with the contemporary American scene.

So 400 **Social Theory** 3 semester hours

The historically distinct and fundamental ideas of the constitutive elements of sociological tradition; theories which form the intellectual background of sociology as well as the logic of contemporary social analysis. Prerequisite: So 302.

So 500 **Independent Study in Sociology** 1-3 semester hours

Open to senior sociology majors only. Prerequisite: Consent of instructor.

SPANISH

Sp 101
102 **Fundamental Spanish I, II** 6 semester hours

Basic oral, written proficiency for daily communication; taken as a self-contained unit or serve as basis for further language development; language laboratory.

Sp 110
111 **Intermediate Spanish I, II – Conversational Approach** 6 semester hours

Conversational patterns, idioms, dialogues; special vocabularies for travel and occupations; language laboratory. Prerequisites: Sp 101, 102 or 2 years high school Spanish.

Sp 112
113 **Intermediate Spanish I, II – Literary Approach** 6 semester hours

Reading, translation; intensive grammar review and structure of language; appreciation of literature. Prerequisites: Sp 101, 102 or 2 years high school Spanish.

Sp 114
115 **Intermediate Spanish I, II – Journalistic Approach** 6 semester hours

Reading, interpretation of newspapers, magazines, journals, speeches pertaining to current events. Prerequisites: Sp 101, 102 or 2 years high school Spanish.

Sp 201
202 **Advanced Spanish Composition I, II** 6 semester hours

Facility in prose writing, style of selected authors; variety of expression through writing, criticism of weekly compositions; required of Spanish majors. Prerequisites: Any Sp 110-115.

Sp 210 **Spanish Conversation I** 3 semester hours

Intensive conversational practice for improving intonation, pronunciation, fluency; review of language usage, introduction to phonetics; language laboratory; recommended for prospective teachers at elementary level in Spanish-speaking areas; required of Spanish majors. Prerequisites: Any Sp 110-115.

Sp 211 **Spanish Conversation II** 3 semester hours
More advanced oral drill, functional exercises; speed, naturalness of more complex speech patterns; language laboratory; recommended for prospective teachers at elementary level in Spanish-speaking areas. Prerequisites: Sp 210, any Sp 110-115.

Sp 220 **Readings in Spanish Literature** 3 semester hours
Selected readings of masterpieces from Middle Ages to present; social, cultural, stylistic features of different periods; offered second semester. Prerequisites: Any Sp 110-115. Open to non-majors.

Sp 230 **Spanish Civilization** 3 semester hours
Cultural contributions through social, political life. Prerequisite: Required Spanish majors any Sp 110-115.

Sp 240 **Spanish-American Literature** 3 semester hours
Representative authors, works from Colonial Period to present; offered first semester. Prerequisites: Sp 201, 202.

Sp 250 **Nineteenth Century Spanish Literature (Romanticism)** 3 semester hours
Reading, intensive study of poetry, essay, drama of Peninsular Romantic Period; novel, other genres of South-American Romantic Period. Prerequisite: Sp 220.

Sp 260 **Nineteenth Century Spanish Literature (The Novel)** 3 semester hours
Development of novel; selected works of Valera, Galdos, and other novelists; offered Spring, odd numbered years. Prerequisite: Sp 220.

Sp 265 **Literature of the Spanish Renaissance** 3 semester hours
Works of the idealistic, realistic literary currents in narrative prose; caballaresque, pastoral, picaresque novels; offered Spring, even numbered years. Prerequisite: Sp 220.

Sp 270 **Cervantes** 3 semester hours
Quijote; selected *Novelas ejemplares;* offered Spring, odd numbered years. Prerequisite: Sp 220.

Sp 280 **Seventeenth Century Drama** 3 semester hours
Selected works of Lope de Vega, Tirso de Molina, Calderon; offered Spring, even numbered years. Prerequisite: Sp 220.

Sp 290 **Contemporary Spanish Literature** 3 semester hours
Role of Spain in modern times through literary works of 1898 to present. Prerequisite: Sp 220.

Sp 300 **Masterpieces of Spanish Literature of the Middle Ages** 3 semester hours
Literature of Spain in Middle Ages exemplified by *El poema del Cid, El libro de buen amor;* offered Spring, odd numbered years. Prerequisite: Sp 220.

Sp 320
321 **The Hispanic World Today** 6 semester hours
Social, economic and political institutions; collective assumptions, value systems and customs; profound and accelerated changes, their significance for the future. Conducted in Spanish. Prerequisite: Intermediate Spanish or consent of instructor.

Sp 400 **Advanced Study: Special Topics** 3 semester hours

Special topics in foreign language, literature, civilization or field work of mutual interest to student and instructor; offered when warranted. Prerequisite: Departmental recommendation.

In 450 **Foreign Language Intra-Departmental Seminar**

For course description see Inter/Intra Departmental course listings.

SPEECH and DRAMATICS

Sd 110 **Principles of Effective Speech** 2 semester hours

Detailed study of the vowel and consonant sounds of the best American speech; stresses the elimination of bad speech habits; provides opportunity to form habits of good speech through frequent practice in speaking and reading.

Sd 122 **Voice and Diction** 2 semester hours

Speaking and reading situations; special emphasis placed on the development of the voice.

Sd 210 **Advanced Public Speaking** 3 semester hours

Debate, discussion and other organizational plans for speaking such as the inductive and the problem solving plan; more advanced speech activities provided for the students through forensic speaking projects and scheduled out-of-class speech engagements.

Sd 240 **Fundamentals of Acting I** 3 semester hours

Workshop covering theory and practice of basic provisations, as well as monologues and duets; principles of characterization, style, intention, etc., are applied to class presentations. Prerequisite: Sd 250.

Sd 241 **Fundamentals of Acting II** 3 semester hours

Continuation of Sd 240 featuring further exercises in specific styles of acting, presentation of scenes in classes, and assigned field trips relative to class projects; classroom credit for work done in cooperation with directing-course students. Prerequisite: Sd 240.

Sd 250 **Oral Interpretation of Literature** 3 semester hours

The techniques of oral expression of literature applied to a variety of material, both prose and poetry; selections from lyric, narrative and dramatic sources are analyzed and presented by the student.

Sd 280 **Stage Direction I** 3 semester hours

Problems of play selection, scene analysis, style, casting, blocking, ensemble, and other concerns of the director; each student prepares a production book and directs a short scene for classroom presentation. Prerequisites: Sd 240, 320.

Sd 281 **Stage Direction II** 3 semester hours

Advanced theoretical and practical problems facing the director; each student directs several scenes for classroom presentation as well as a one-act play. Production book required. Prerequisite: Consent of instructor.

Sd 290 **Children's Theater** 3 semester hours

Organization and conduct of a children's theater: the selection of a play, casting, rehearsals, make-up, central staging, and problems in putting on plays in classroom and other limited areas.

Sd 310 **Stagecraft** 2 semester hours

Technical aspects of theatre; the use of stage facilities, the construction and handling of scenery and lights and the role of the stage manager and crew during production; two class hours plus crew work.

Sd 320 **Manuscript Evaluation For Production** 3 semester hours

Evaluation of the play from a wholly theatrical point of view; instruction in manuscript analysis concentrates on the quantitative and qualitative parts of the play as an aid to the prospective director in conceiving and orchestrating the play for production.

Sd 321 **Rehearsal and Performance** 1-3 semester hours

Registration through add-drop procedure following auditions which take place early each semester; credits vary according to involvement; table of credit values for all production functionaries is available in department production manual.

Sd 330
331 **History of the Theatre I, II** 6 semester hours

The evolution and development of the theatre in the West from antiquity to the present; the reading of representative plays of each period studied.
Sd 330: Antiquity, the Middle Ages, the Golden Age of Spain, Italian Renaissance, Tudor and Stuart periods, the age of Louis XIV, the English Restoration and Venetian comedy (Commedia dell' arte).
Sd 331: 18th century France, 18th century England, the American theatre and European Naturalism.

Sd 332 **The American Theatre** 3 semester hours

History and nature of drama and dramatic performances from the colonial period through the present; relationship of theatre to political, cultural, and social forces and events; readings of selected plays and source material required;offered Fall, even numbered years.

Sd 334 **Theory and Criticism of Theatre** 3 semester hours

Theatre theory from the classical masters to modern critics; practical criticism of live theatrical productions; offered Spring, 1974 and alternate years.

Sd 386 **Playwriting** 3 semester hours

Creating effective characterization, plot development and dramatic action with the ideological understructure of the script; completion of one act play is required; offered Spring, odd numbered years.

Sd 500 **Independent Study in Theatre** 3 semester hours

A project of major scope demonstrating original contribution to department, mastery of necessary craft, and when necessary, facility in managing co-workers. Prerequisite: Consent of Department.

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WORCESTER STATE COLLEGE
CALENDAR FOR 1972-73

FIRST SEMESTER

Orientation Begins	Tuesday, September 5
Registration	September 7 and 8
Classes Begin 8:30 a.m.	Monday, September 11
Columbus Day — Holiday	Monday, October 9
Veteran's Day — Holiday	Monday, October 23
Professional Day — Holiday	Friday, November 3
Thanksgiving Vacation Begins 12:30 p.m.	Wednesday, November 22
Classes Resume 8:30 a.m.	Monday, November 27
Christmas Vacation Begins 5:00 p.m.	Friday, December 15
Classes Resume 8:30 a.m.	Tuesday, January 2
Classes End 5:00 p.m.	Thursday, January 11
Study Day	Friday, January 12
Final Exams Begin 1:30 p.m.	Saturday, January 13
Final Exams End — Vacation Begins 3:30 p.m.	Friday, January 19

SECOND SEMESTER

Registration	January 29, 30, 31
Classes Begin 8:30 a.m.	Thursday, February 1
Washington's Birthday — Holiday	Monday, Febraury 19
Spring Vacation Begins 5:00 p.m.	Friday, March 23
Classes Resume 8:30 a.m.	Monday, April 2
Patriots Day — Holiday	Monday, April 16
Good Friday — Holiday	Friday, April 20
Classes End 4:30 p.m.	Thursday, May 24
Study Day	Friday, May 25
Final Exams Begin 1:30 p.m.	Saturday, May 26
Memorial Day — Holiday	Monday, May 28
Final Exams End 3:30 p.m.	Saturday, June 2
Commencement	Sunday, June 10